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EMPLOYER STRATEGIES FOR A CHANGING LABOR FORCE:

A Primer on Innovative Programs and Policies

Research Report

National Commission for Employment Policy

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The opinions expressed in this paper are those of the authors and do not necessarily reflect the opinions of the members and staff of the National Commission for Employment Policy.

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PREFACE

The world of work is changing dramatically. Increased domestic and international competition, new technologies, and lagging productivity growth are just a few of the major challenges facing American business. As companies adapt their goals and strategies to these developments, the very nature of work will also be affected. In this environment, strategic plans must include provisions for the efficient and effective use of human resources.

Over the next ten years, millions of jobs in the goods-producing and service sectors will be restructured and, as a result, will require different and often new skills. Large numbers of jobs will also be replaced by new occupations, many of which will demand higher skill levels than those eliminated. Because workers who do not have the right skills cannot perform their jobs, American businesses face the challenge of developing specific strategies to ensure that their workers have the capabilities needed to adapt to these changes.

First, with fewer workers from which to choose, employers have to make greater use of incumbents. While training existing workers is not new, a labor shortage environment makes the training payoff even more important. It also requires dipping further into internal labor queues to meet new skill needs. As employers have attempted this, a surprisingly large number of experienced workers have been found with basic skills deficiencies sufficient to prevent them from participating in retraining and upgrading programs successfully. In these instances, existing training programs alone have not been enough to facilitate the development of new skills and knowledge. It has become apparent that retraining and upgrading incumbents will require integrating skills training with a more planned process of development that includes basic skills remediation.

Since future output requirements cannot be met solely by increasing the productivity of existing workers, employers also have to recruit new workers. However, new workers are in short supply and many of those available for hire are disproportionately from groups that bring to the workplace a different set of needs and desired benefits, ranging from basic skills training to dependent care and flexible work policies. Unless efforts are made to recruit these new types of workers and address their training and employment needs, employers will have difficulty meeting their hiring requirements and remaining competitive.

This monograph promotes awareness of these issues by reviewing steps employers can take to respond to changes in the size and composition of the labor force. It is designed as a primer for small and large businesses who are getting started on these issues and who can benefit from an introduction to them. The monograph focuses on three basic

strategies germane to most labor and skill shortage problems, including: 1) improving the entry-level recruitment and staffing function; 2) planning and implementing basic skills and related training programs; and 3) introducing dependent care and work related policies. For each of these strategies, the monograph reviews key planning and implementation issues as well as the experience that many employers have had in addressing them.

To prepare the monograph, the authors relied on the experience and advice of many individuals, organizations, and businesses. In-person and telephone interviews were conducted with representatives from business groups, government agencies, and program providers who are concerned with labor and skill shortage problems. They also conducted an extensive review of the literature and visited a number of businesses which were identified as having implemented successful workplace programs and policies. The information that was collected was synthesized and used as the basis for preparing what is hoped to be a useful and practical guide that employers can use as a road map for planning future human resources strategies.

Organization of the Monograph

The monograph is organized into two major parts. **Part I** focuses on practical strategies that firms can take to address challenges posed by changes in the labor force. The first chapter is an overview and briefly reviews the nature of the challenges faced by employers. The remaining three chapters focus on innovative practices and programs that can be implemented to: 1) strengthen entry-level recruitment and staffing; 2) establish workplace basic skills programs; and 3) develop dependent care and related policies.

Part II of the monograph includes the results of visits to five organizations that have developed successful programs and policies in response to labor force changes. These organizations include: 1) The Alliance for Employee Growth and Development, a joint human resources development venture of AT&T, the Communications Workers of America, and the International Brotherhood of Electrical Workers; 2) The Highland Park Day Care Center, a consortium-based model for providing on-site child care services to small and large businesses; 3) Superior Technical Ceramics, a small manufacturer in Vermont that implemented an in-house basic skills program; 4) Lancaster Labs, Inc., a small testing business that built its own on-site day care facility; and 5) Motorola Inc., a large electronics manufacturer that implemented a variety of basic skills programs for its workforce.

These case studies present a detailed account of the experience of each organization and will provide the reader with the benefits of key lessons and issues that emerged in the implementation of labor shortage policies and programs.

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Part I

An Introduction to Innovative Programs and Policies

CHAPTER 1

THE CHALLENGE OF A CHANGING LABOR FORCE

The challenge of meeting workplace needs appears in many respects to have never been greater. At the same time that employers are increasingly seeking well trained and educated workers, fewer individuals will be available for work. Between now and the year 2000, the nation's aggregate labor force is projected to grow more slowly than at any time since the 1930s.[1] The number of 18 to 24year olds, for example, will decrease to roughly 23 million in 1995, down from 28.9 million in 1980. By 1995, there will be 2.2 million fewer labor force participants in this age group in comparison to 1986. The slow growth of the labor force and the diminishing numbers of new, young workers present the nation's employers with potentially unprecedented labor shortages, placing substantial pressures on their wage structures, recruitment functions, and efforts to retain and develop existing employees.

The reduced rate of labor force growth will be exacerbated by important changes in the composition of the labor force.[2] In comparison to the workforce of the 1970s and early 1980s, future workers will be older and more likely to be women, minorities, immigrants, and those from educationally and economically deprived backgrounds. By the year 2000, 80 percent of all new labor market entrants will be composed of the first three of these groups. Moreover, immigrants are projected to account for 22 percent of all new workers between 1985 and 2000, in comparison to their 7 percent share of the labor force in 1985. A major part of the solution to the potential labor shortage problem will likely require greater and more efficient use of these new sources of labor.

Changes in the size and character of the nation's labor force have been well documented. In fact, the issue is hardly news to most companies and public policy officials. Trade and business tabloids, the newsprint, the broadcast media, as well as scholarly journals have devoted substantial attention to these current and forthcoming changes in the magnitude and nature of the labor force. Yet for all the research and public discussion, most employers have limited experience with addressing the human resource implications of these changes. While there are several such implications, six have been highlighted consistently:

1. The growing shortage of available workers will require companies to develop new policies and procedures that increase employee productivity and retention, and facilitate career and skill development among existing workers. Increased on-the-job training and offsite educational development as well as changes in compensation and benefits will likely be among the options that will require new, creative attention.

2. The shift in the characteristics of available workers will require new recruitment strategies. The use of help-wanted advertisements and professional search firms will likely prove ineffective for many segments of the available workforce. Employers will increasingly have to reach out to prospective employees through non-traditional recruitment agents such as local government agencies and community-based organizations.

3. The increasing share of workers with limited skills and education will expand the need for literacy and basic skills training, both on- and off-the-job. It may also require modifications in hiring requirements, job restructuring, and new career ladders and associated training. While public education and training institutions have an important role to play here, companies will also be faced with a need to promote literacy development and make maximum use of available workers.

4. The projected growth of the immigrant labor force will add to the need for literacy training. It will also introduce new issues for organizational cultures to address. English-as-a-second language as well as cultural sensitivity training will become more important as the immigrant population expands its share of the labor force.

5. The aging of the labor force will translate into an increased demand for part-time and flextime employment and greater demand for elder-care. As a result, companies may need to reconsider their retirement and pension policies as well as their ability to address the needs many employees will have for elder-care.

6. The continued growth of dual working families and single mother workers will add to the already strong demand for child-care services and flexible workplace policies. More attention will have to be placed on developing creative, cost-effective solutions to the growing need for day-care and other supportive policies. Flextime, job sharing, employer sponsored child-care, referral services, and flexible leave policies are among the types of alternatives that will likely receive increased attention.

To date, the bulk of attention to these issues has focused on supply-side public policies, particularly as they relate to new and emerging sources of labor. There has been a growth of sponsored research studies aimed at examining the importance of basic skills in the workplace as well as the special training and employment problems faced by rapidly expanding segments of the labor force. Demonstration programs and efforts to create public-private training and education partnerships have also been initiated.

This public policy orientation has made an important contribution to our understanding of labor shortage problems. It has underscored the need for improvements in the quality of education and training in the U.S., and provided a better understanding of the training, remediation, and related employment needs of new emerging segments of the labor force. At the same time, limited attention has been devoted to steps that firms can take to adjust to labor and skill shortages.

The evidence that does exist on employer responses to labor shortages suggests a short-term strategy with little emphasis on changing recruitment practices, internal training, or the structure of jobs within the workplace. According to a recent national survey, only 28 percent of all responding firms targeted the economically disadvantaged as a new source of labor and just 18 percent targeted immigrants, one of the fastest growing segments of the labor force. In addition, the findings from this survey and other similar surveys have indicated that, in addition to wage increases, most firms have responded to labor shortages by intensifying traditional recruitment, hiring, and development strategies (e.g., greater use of help-wanted advertisements and recruitment bonuses). The introduction of upgrading, retraining, and basic skills programs, changes in occupational staffing patterns, job restructuring, and even dependent care are still offered by only a small proportion of all employers.[3]

Given these results, it would seem that employers may need to do more. Continued changes in skill and education requirements alone suggest the need for greater levels of upgrading and retraining. When combined with a slow growing and aging labor force that is also undergoing demographic shifts, it is clear that a new era in human resources management is emerging.

The Challenges Ahead

As we approach the next century, employers will face several critical human resources challenges. Three, in particular, will likely affect a broad spectrum of employers across both industry lines and size categories. These include:

1. The Basic Skills Challenge
2. Changing Worker Expectations
3. Human Resources as a Long-Term Investment

The Basic Skills Challenge

Basic skills have emerged as an important issue for three reasons. The first is that rising education and skill requirements have increased the demand for workers who are able to learn new, more advanced skills.[4] As employers have had to rely increasingly on their existing workforce to acquire these skills, they have found a surprisingly large share without the basic skills needed to participate in upgrading and retraining programs successfully.

Problems with basic skills have also surfaced as a result of organizational changes that demand more independent initiative and problem-solving, and place greater reliance on teamwork. In these instances, employers have looked for their workers to display strong communication, leadership, and conflict management skills. Since the majority of American workers have not gone beyond high school, and because a rising share have already settled into their careers, many have not had the opportunity to learn or practice these new types of skills that are becoming more important in the workplace.[5] As a result, difficulties have often emerged as employers attempt to introduce new, more productive forms of organizational management.

Another part of the basic skills issue relates to the characteristics of many new workers. In the U.S. today, large proportions of young adults are functioning at relatively low levels of basic skills. As shown below, just 61.5 percent of all individuals 21 to 25 years of age can read at the eleventh grade level. Among those with a high school diploma

and some post-secondary education, as few as 55.9 percent read at this level. Although substantial progress has been made in educational achievement overall, the evidence would seem to suggest that it has not kept pace with rising workplace demands. In fact, recent test score results published by the Educational Testing Service reveal that most of the gains in education have been made at the bottom of the achievement ladder. While more individuals can function at minimum levels of literacy, there have been few, if any, gains at higher levels of literacy that are often required for today's jobs.[6]

Additionally, educational gains have not been uniform across all demographic groups. While minorities have made substantial gains in education, they lag significantly behind whites.[7] Since minorities will account for a disproportionately large share of total labor force growth over the next ten years, their basic skills deficiencies are both more evident and problematic for employers and society in general.

Percent of Young Adults (21 to 25) at or Above the Average Reading Proficiency of 4th, 8th, and 11th Graders

		LEVEL OF EDUCATION				RACE/ETHNICITY		
Grade	Total	0-8	9-12	H.S. Diploma and More	Post-Secondary Degree	White	Black	Hispanic
11	61.5	15.1	27.4	55.9	83.3	67.6	31.0	52.3
8	79.8	37.0	53.6	77.9	95.6	85.0	53.0	70.9
4	94.0	73.3	76.1	94.7	99.6	96.2	82.2	92.4

Source: Irwin S. Kirsch and Ann Jungeblut, Literacy: Profiles of America's Young Adults, Educational Testing Service), Report No. 16-PL-02, Princeton, NJ.

Facing up to these basic skills challenges is critical. They have a clear bearing on the effectiveness of existing upgrading and retraining programs and the ability of firms to recruit new workers and employ them successfully. The seriousness of the challenge is also evident from the fact that the vast majority of employers do not currently offer basic skills training and have not yet begun to recruit from many of the growing segments of the labor force.[8] The experience of those employers who have introduced basic skills programs for existing workers or new recruits indicates that engaging adults in a structured workplace learning environment can be difficult.

Unless steps are taken to address this challenge, many firms will be hard pressed to meet their hiring and skill requirements successfully.

Changing Worker Expectations and Needs

Not so long ago, the average American worker could be characterized as a man earning enough to care for his family, including his wife, who more often than not stayed at home to care for the children. This man would typically experience a "settling-in" process early in his career, and eventually find a job and an employer with whom he would be lucky enough to stay with for a long period of time if not his entire career. Over the last twenty years, several developments changed this picture sharply, and modified the basic relationship between workers and their jobs.

One was the rapid growth of working single mothers and another was the sharp increase in dual-working families. The American labor force is no longer dominated by the male wage earner. Today, women are employed in a variety of occupations and industries, and because of their large numbers and rising education levels, are coming occupy a larger proportion of the highest paid and most responsible jobs in the U.S.[9]

Another development has been the continued effort by American firms to downsize and otherwise adjust their workforces to be more competitive.[10] Beginning in the early 1980s, large numbers of workers were displaced from their jobs as a result of plant closings and permanent reductions in force. It is estimated that between 1981 and 1986, for example, nearly 8.8 million full-time workers lost their jobs for these reasons.[11] While the back to back recessions beginning in 1980 were a major cause of these reductions, firms have continued to downsize their workforces even during times of strong economic growth. A recent survey by the American Management Association indicated that between 1988 and 1989, 39 percent of U.S. employers had reduced their workforces to address competitive pressures. For many workers, these developments have shaken the basic expectation of long-term job security and introduced the strong possibility that employment over one's lifetime will likely involve working for several different employers.

As these changes have taken hold, they have modified the basic relationship between workers and their jobs and particularly, what employees expect from their employers. As a result of the rise in dual-working families and single mother workers, the demand for child care assistance has also increased. It has become evident that employees look to their employers for assistance with securing care for their children, whether it be through on-site centers or through information referral service. With more working parents, employers have also been faced with a rising demand for greater workplace flexibility that allows employees to better balance their responsibilities and commitments to their careers and their families. Employers who do not address these issues have, and will continue to be faced with recruitment difficulties, higher turnover, and more frequent work interruptions.

Changes have also occurred in how employees view their careers and their commitment to an employer. As a result of more frequent layoffs, organizational changes, and job restructuring, the promise of long-term security with one employer has been all but eliminated. This is as true for white-collar professional workers as it is for

the blue-collar production workers. Throughout the U.S., greater numbers of workers are having to think in terms of "career security," and often look to their employers to play a greater role in skill upgrading and retraining and in providing career counseling and other related support services.

Human Resources As a Long-Term Investment

All signals indicate that a new framework is needed to manage several key elements of the human resources function. Continued economic restructuring, a slow-growing and aging labor force, and increasing demand for a skilled, educated, and flexible workforce will make it important for employers to invest in their employees and establish policies to support their continued development. Making these investments is sensible only if employers view their workers as long-term investments.

As things now stand, employers have an interest in their workers acquiring the skills and capabilities related directly to their jobs. This enhances productivity and limits the extent to which workers can take their new skills to other employers. Indeed, the economics of retraining suggest that employers can benefit directly from making the increased investments that may be warranted to ensure that their workers can perform productively on their jobs.

While workers can also benefit from this type of specific training, more broadly based career development, including the acquisition of basic skills, is potentially more risky for employers since it is marketable to a wide range of other firms. At the same time, helping workers acquire these basic skills and prepare for change is what is often necessary for upgrading and retraining programs to be successful. Despite the potential costs of these services, continued downsizing, and changes in skill requirements and the labor force may well make them unavoidable. By adopting a long-term perspective, employers will be better able to realize the benefits of these investments since, even in the short-term, it will help to promote productivity and lower hiring and other related transaction costs.

Taking a long-term perspective is also what is needed to support dependent care and related policies. While it is surely possible to manage without such policies, over time employers will likely face continued hiring and retention problems as well as more frequent interruptions to work. Human resources are the wealth of nations, and making the necessary investments in them will benefit all employers, directly and indirectly.

Surviving as a Small Business

The challenges posed by a changing labor force will affect all businesses. However, small businesses face special needs. While the issues that small business must confront are not materially different from those of larger firms, what is often different is the manner by which small business must address its needs. **Relatively limited resources, time, and expertise suggest small business will have to place greater reliance on multi-firm consortia, public education and training programs, and other cost-sharing arrangements to address their human resources needs.**

The special problems faced by small business are not inconsequential either. Small business accounts for roughly 50 percent of total U.S. employment and is responsible for contributing nearly half of all

jobs that grew throughout the 1980s.[12] At the same time, small business is more vulnerable to the effects of labor and skill shortages.

Relative to larger firms, small businesses have higher levels of turnover (even after controlling for demographic, wage, and other important differences), and employ greater shares of youth as well as less educated workers.[13] As shown below, small businesses are also less likely than their larger counterparts to offer a variety of important types of training. Remedial education, for example, is offered by less than 20 percent of all small businesses, in comparison to roughly one-third of larger businesses. Similar differences exist with respect to communications skills, computer literacy training, customer relations, and life skills. These differences, combined with limited resources, will present many small businesses with formidable challenges to attracting, retaining, and developing qualified employees.

SELECTED TYPES OF TRAINING PROVIDED BY FIRM SIZE, 1987(Percent of Employees)

Type of Training	Total	FIRM SIZE					
		Less than 100	100 to 1,500	500 to 1,500	1,500 to 5,000	5,000 to 10,000	10,000 and above
Communication Skills	68	57	63	65	80	91	91
Computer Literacy	6[illegible]	57	65	73	72	62	68
Customer Relations	52	48	43	47	72	76	73
Personal Growth/Life Skills	22	12	15	26	31	38	27
Skills Training	59	59	57	60	62	62	68
Remedial Training	26	19	18	29	35	48	32

Source: 1989 Training/Retraining Survey. (Society for Human Resources Management), Alexandria, VA, 1989.

Business survival in the next century will depend partly on how well employers are able to attract and maintain well educated and skilled workers. For the small business, survival will also depend on establishing creative ways to share the costs of such

functions as basic skills training, dependent care, and retraining. As the experiences of several small businesses have already shown, establishing such linkages is both feasible and a very productive use of resources.

Creating Local Partnerships

Establishing partnerships with local community and business organizations is one way that small business can leverage the resources required to meet many of its hiring and training needs. Local organizations, such as the Chamber of Commerce, community-based organizations (CBOs), and Private Industry Councils (PICs) can, for example, serve many roles to help leverage resources and improve access to new sources of labor. By contacting local business or community organizations, small business can establish effective linkages that will improve its ability to address future recruitment, training, and education needs.

For many small businesses, the public employment and training system has proven to be an effective vehicle for meeting future human resources requirements. This system's flexibility, strong private sector involvement, and local orientation has made it a viable vehicle for leveraging resources and establishing relationships with key training and education institutions.

The centerpiece of the employment and training system is the Job Training Partnership Act (JTPA). This program, created by the federal government in 1982, is administered at the local Service Delivery Area (SDA) level and designed to provide a wide variety of employment, training, education, and related programs. To ensure strong private sector involvement, each SDA has a Private Industry Council, the majority of whose members must come from private business. These PICs are responsible for program planning and oversight, and for establishing relationships between and among local businesses, training providers, and other institutions providing education and related services.

Funds made available under JTPA are targetted on "economically disadvantaged" individuals and workers displaced from their jobs. Eligibility is defined broadly and PICs have substantial discretion in determining the types of programs to offer, including, but not limited to skills training, remedial education, English-as-a-Second Language, on-the-job training, and support services, such as child care.

Because of JTPA's flexibility and focus, PICs can serve as the focal point for business partnerships to acquire and train experienced as well as entry-level workers. They can, for example, assist in developing specific relationships with an individual firm or can be the catalyst for a consortium of employers who wish to work together to address a particular need. For small business, establishing a relationship with the local PIC can be an effective vehicle for leveraging training and education resources and recruiting new and experienced workers. A call to the Mayor's Office, Town Hall, or the Chamber of Commerce can identify how to best contact the local area's PIC.

Chapter Endnotes

[1]Johnston, William B., Packer, Arnold E., Workforce 2000: Work and Workers for the Twenty-first Century. Hudson Institute, Indianapolis, IN, 1987.

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[4]For a review of changing job requirements see: Johnston, William, et. al.; and Seitchik, Adam, Zornitsky, Jeffrey, From One Job To The Next: Worker Adjustment in a Changing Labor Market, (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research), 1989.

[5]In 1985, for example, 61.3 percent of non-agricultural wage and salary workers had a high school diploma or less. See: Seitchik, Adam, Zornitsky, Jeffrey, op. cit.

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[7]Ibid.

[8]See: 1988 ASPA Labor Shortage Survey, (American Society for Personnel Administration), Alexandria, VA, 1988; and 1989 Training/Retraining Survey, (Society for Human Resources Management), Alexandria, VA, 1989.

[9]In 1979, for example, 6.2 percent of women between the ages of 25 and 54 were employed in the highest quartile of the wage and salary distribution; by 1985 this share had risen to 13.1 percent. In some sectors, such as financial services, women accounted for as much as 33.8 percent of all executive and management positions in 1985, up from 10.7 percent in 1970. Similarly, women held 23 percent of the highest paying financial service jobs in 1985, an increase of 18 percentage points over 1970. These data are taken from: McDougal, Edward F., and Zornitsky, Jeff, Labor Force Quality Issues in New York's Financial Services Sector, Prepared for: Urban Research Center, New York University, New York, NY, 1988.

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CHAPTER 2

STRENGTHENING ENTRY-LEVEL RECRUITMENT AND PLACEMENT

Changing labor force dynamics have intensified pressure on the most basic human resources staffing functions--recruitment, screening, selection, and placement. Most companies have responded to this pressure by expanding the use of traditional practices such as raising wages, hiring more temporary workers, and intensifying newspaper ads. Overall, these popular strategies have not been very effective in increasing the number of qualified applicants or improving the match between workers and jobs. There are, however, a number of ways that businesses can strengthen these human resources functions and avoid the adverse effects of labor and skill shortages.

This chapter is devoted to helping companies improve the effectiveness of entry-level recruitment and selection in a changing labor force environment. The chapter begins by reviewing why it is important to consider making changes to these basic human resources functions. This is followed by a presentation of two basic strategies for improving the effectiveness of recruitment and selection:

> **Strengthening the Basics** focuses on steps companies can take to improve the effectiveness of existing practices and programs to recruit and place employees. This includes developing helpful information systems to track hiring costs, applicants, and job vacancies; broadening traditional recruitment strategies; providing new recruitment incentives and benefits; and creating more efficient testing and selection systems.
>
> **Broadening the Recruitment Net** includes strategies for recruiting new sources of workers and employing them successfully. Expanding the recruitment base begins with realistically assessing the available labor pool. Subsequent steps include understanding the needs of each group of potential workers; tailoring recruitment tactics to reach out to a diverse work force; exploring cost-saving public/private partnerships; increasing the objectivity of screening practices such as testing and interviewing; and integrating the new hires into the company with innovative orientation, "managing diversity," and related training programs.

Is There a Need for Change?

Over the past several years, there have been a number of indications that current practices to recruit and place new employees have become less effective. The most telling and broad indicator of this difficulty is reflected in what economists call the Beveridge Curve. This curve depicts the relationship between the number of job vacancies and the unemployment rate. It is used to determine whether employers are

having more or less difficulty filling vacancies for a given rate of joblessness. Since the unemployment rate at the end of the 1980s was comparable to the rate at the beginning and end of the 1970s (i.e., 5.5 percent), the Beveridge Curve can be very instructive in identifying whether a fundamental change has occurred in the effectiveness of the job matching process.

Using data obtained from the Conference Board on the volume of help-wanted advertisements placed with newspapers around the country (as a proxy for job vacancies), a Beveridge Curve can be plotted for the years 1970 to 1989. This is shown in Exhibit 1 and indicates that the curve has shifted outward to the right, suggesting that during the 1980s, there were more vacancies available for a given rate of unemployment than in past years. This indicates that employers throughout the United States have indeed experienced more difficulty filling their jobs than in the past.

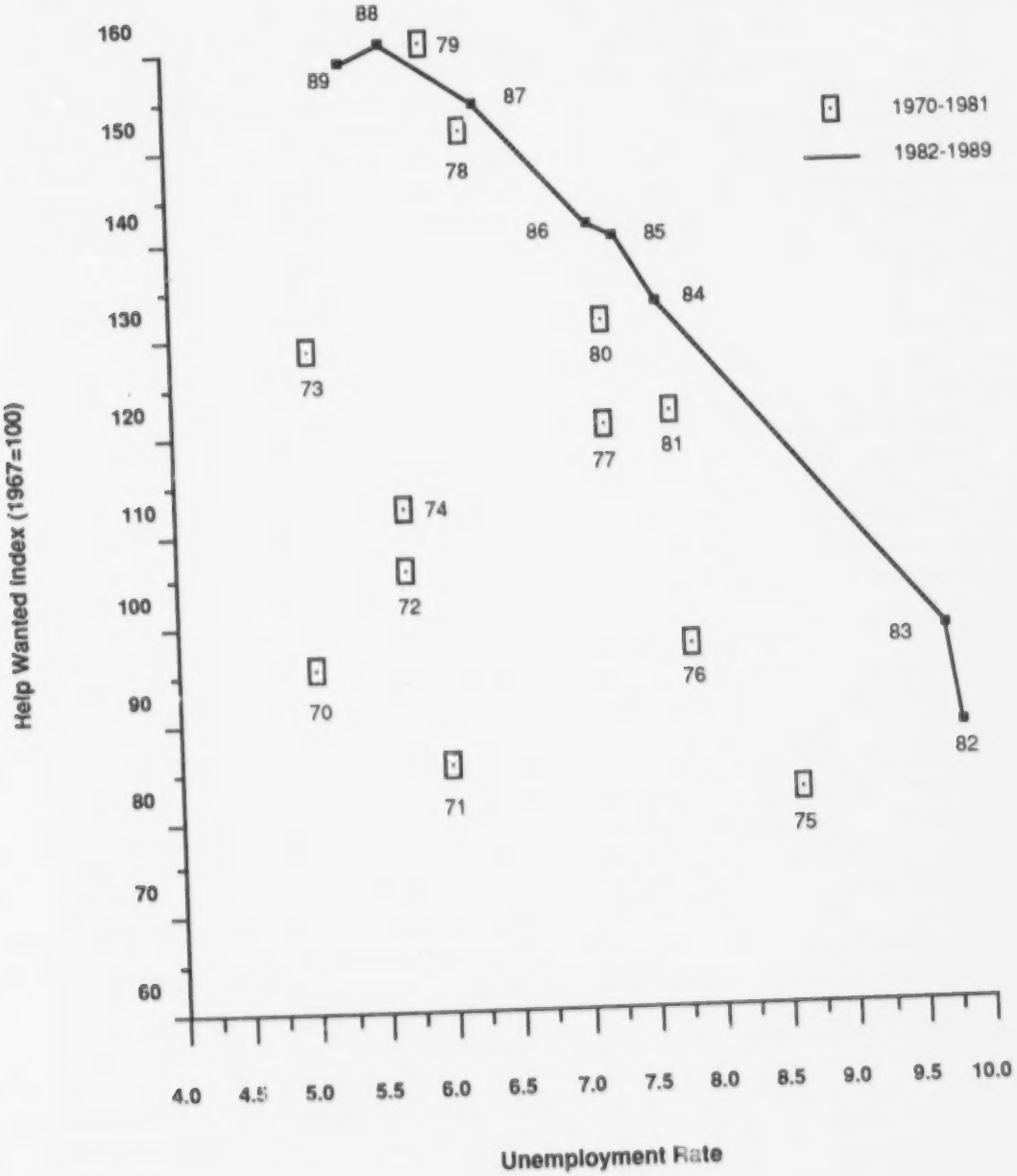
Supporting this result is the sharp increase in recruitment costs during the last part of the 1980s. According to estimates obtained from the Saratoga Institute, the average cost per new hire between 1987 and 1988 increased by over $1,000 for exempt (salaried) employees and by over $200 for non-exempt (hourly) employees. In fact, the 1988 average cost of recruitment was up to $7,495 per exempt hire, a 16 percent increase over 1987, and $654 per non-exempt hire, a 46 percent increase over the same period.[1] Since these increases were well in excess of inflation, it is safe to say that the effort and resources required to attract and retain employees did indeed go up.

Taken together, these indicators suggest that it is fundamentally more difficult to fill vacancies than in the past. Understanding why this has occurred, however, is important to improving the effectiveness of the staffing function. Certainly, mismatches between emerging skill requirements and the capabilities and interests of existing workers have played an important role.[2] But so has a slow growing labor force, as have changes in the characteristics of new labor market entrants. It is now a matter of fact that there are fewer new recruits than in the past, and those available for hire are disproportionately comprised of groups with whom employers have had little experience. Single mothers, the less educated, recent immigrants, and minorities present the workplace with a new set of more complex challenges. Based on the results to date, it would appear that just as the public education and training system is undergoing quality-based changes, improvements will also have to be made in the recruitment and placement functions carried out by employers.

For one thing, employers will have to look to get more from their existing investments in staffing. Most studies of hiring practices have revealed that the selection process, particularly among smaller employers, is not conducted as effectively as it could be. A surprising number of employers do not rely on formal job related selection criteria or tests, and do not systematically check references or educational achievement. Recruitment, particularly in many small firms, is also constrained by limited budgets and resources, including staff time. In the current labor shortage environment, ensuring that the basics of recruitment and staffing are working well is necessary to attract qualified applicants and select the right person for the job.

The staffing function itself may also have to undergo some basic changes. One key reason is that doing more of the same will not always work. A 1988 national survey conducted by the Society for Human Resources Management (formerly the

Exhibit 1
The Help-Wanted Index vs. The Unemployment Rate, 1970-1989



Sources: Help-Wanted Index from the Conference Board, "Statistical Bulletin" (Monthly), New York. Unemployment Rate from "Labor Force Statistics Derived from the Current Population Survey, 1948-87" and from the Monthly Labor Review, January 1990. 1989 Data for January-June Only, Seasonally Adjusted

American Society for Personnel Administration), revealed that most employers have chosen to address labor shortages by intensifying traditional recruitment tactics.[3] Increased use of help-wanted ads, greater utilization of temporary workers, and increased wages were among the most frequently cited tactics used by employers. At the same time, the majority of these employers also reported that these strategies were not very successful in attracting additional qualified employees. Some of the more important limitations of existing staffing practices are illustrated in Exhibit 2.

In the current labor market environment, it is clear that running a tight ship is important. But it is also certain that employing new types of workers can often mean changes in recruitment, selection, training, and/or initial placement. Community-based recruitment, functional assessment, basic skills training, and initial on-the-job support programs are among key changes that are beginning to emerge in entry-level staffing. More and more, employers are starting to adapt various aspects of their staffing function to accommodate a labor force in which greater proportions of new workers are not as easily employed as their earlier counterparts. Exhibit 3 presents an illustration of what may well emerge as entry-level staffing strategies for the 1990s.

Presently, there are a number of innovative, practical options that can help address present and future staffing problems. Some of these involve improving existing practices, while others are centered around expanding the recruitment base to new sources of workers. The remainder of this chapter provides a review of how employers can pursue these two strategies: 1) strengthening basic functions; and 2) broadening the recruitment net.

Strengthening the Basics

Strengthening the basic hiring and staffing function is one strategy employers can adopt to address labor and skill shortages. As with any business function, it is important to ensure that maximum value is obtained for a given investment. This section focuses on steps employers can take to improve the value of their basic staffing functions. Four areas are addressed briefly, including:

1. Managing recruitment effectively.
2. Broadening recruitment tactics.
3. Use of recruitment incentives.
4. Testing and selection.

Managing Recruitment Effectively

One of the first tasks in addressing the staffing issue is evaluating existing recruitment practices. Employers should begin by examining how efficiently their recruitment function is operating and where there are opportunities for improvement. Essential to this task is a management information system to track and evaluate the efficiency of the function. If such a system does not exist, employers would do well to consider implementing one.

A useful management system need not be elaborate, or even automated, but should include three fundamentals: 1. tracking hiring costs; 2. monitoring job vacancies and job applicants; and 3. evaluating employee performance. The easiest costs to monitor are the explicit ones such as advertising, outside search firm fees, employee referral bonuses, applicant and staff travel time, and the salaries and benefits paid to recruiters.

Exhibit 2
Traps in Using Traditional Entry-Level Recruitment and Selection Practices

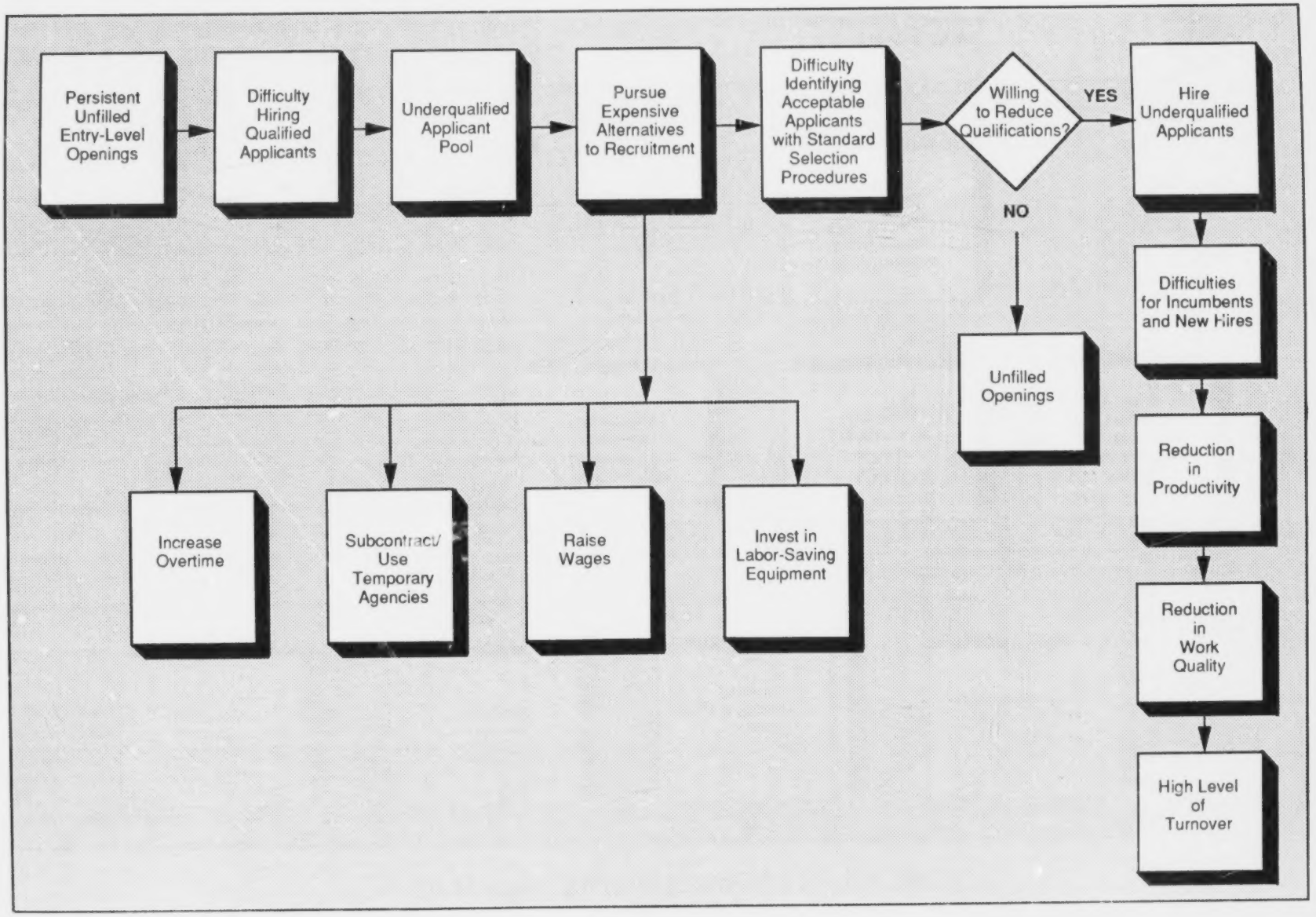
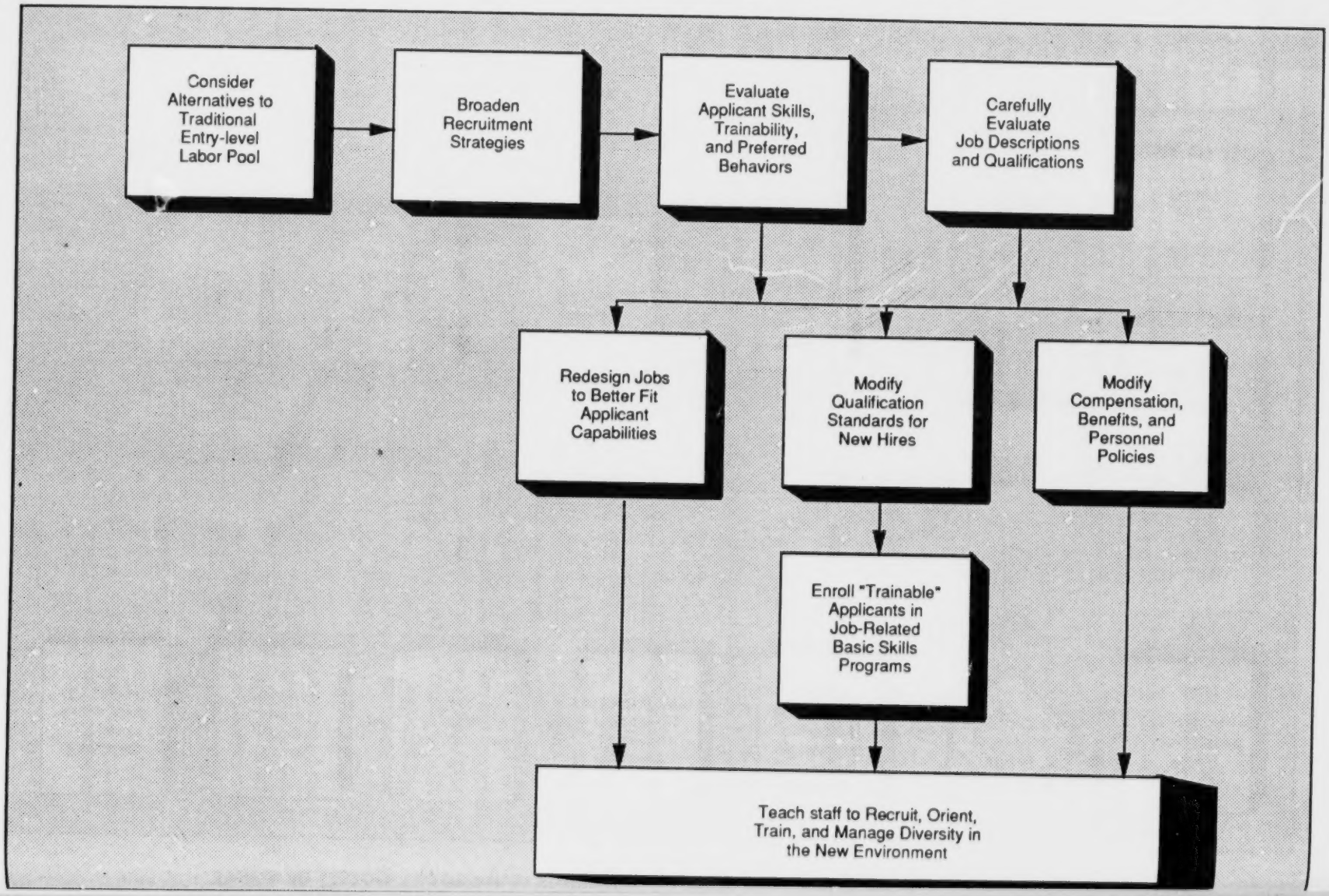


Exhibit 3
Entry-Level Staffing Strategies for the 1990s


Consider Alternatives to Traditional Entry-level Labor Pool
Broaden Recruitment Strategies
Evaluate Applicant Skills, Trainability, and Preferred Behaviors
Carefully Evaluate Job Descriptions and Qualifications
Redesign Jobs to Better Fit Applicant Capabilities
Modify Qualification Standards for New Hires
Modify Compensation, Benefits, and Personnel Policies
Enroll "Trainable" Applicants in Job-Related Basic Skills Programs
Teach staff to Recruit, Orient, Train, and Manage Diversity in the New Environment

Ideally, vacancies should also be tracked in total and by type of job. Important statistics to calculate about vacancies are the cost per hire and the time it takes to fill an opening. Productivity statistics, usually in the form of worker evaluations, can then be used in combination with the other relevant data to answer the following questions regarding recruitment and selection:

- What type of openings are most common?
- Which openings take most time to fill?
- Which positions generate most of the hiring costs and what is the cost per hire among different positions?
- Which positions have the highest turnover rates?
- Which positions have the lowest job performance ratings?
- What staffing functions are responsible for the bulk of recruitment costs?

On the basis of answers to these questions, explicit recruitment budgets can be established, targeted, and monitored on a routine basis, providing helpful feedback on progress toward hiring goals.

Another critical area to examine is the role of recruiters. Recruiting responsibility is often given to the personnel or human resource department, while line managers are in charge of making final hiring decisions. The overall staffing function is thus shared, and accountability can become a problem. Identifying staffing goals and establishing clear areas of responsibility for managers, recruiters, and the personnel department is essential to developing an efficient recruitment and hiring effort.

Broadening Entry-Level Recruitment Tactics

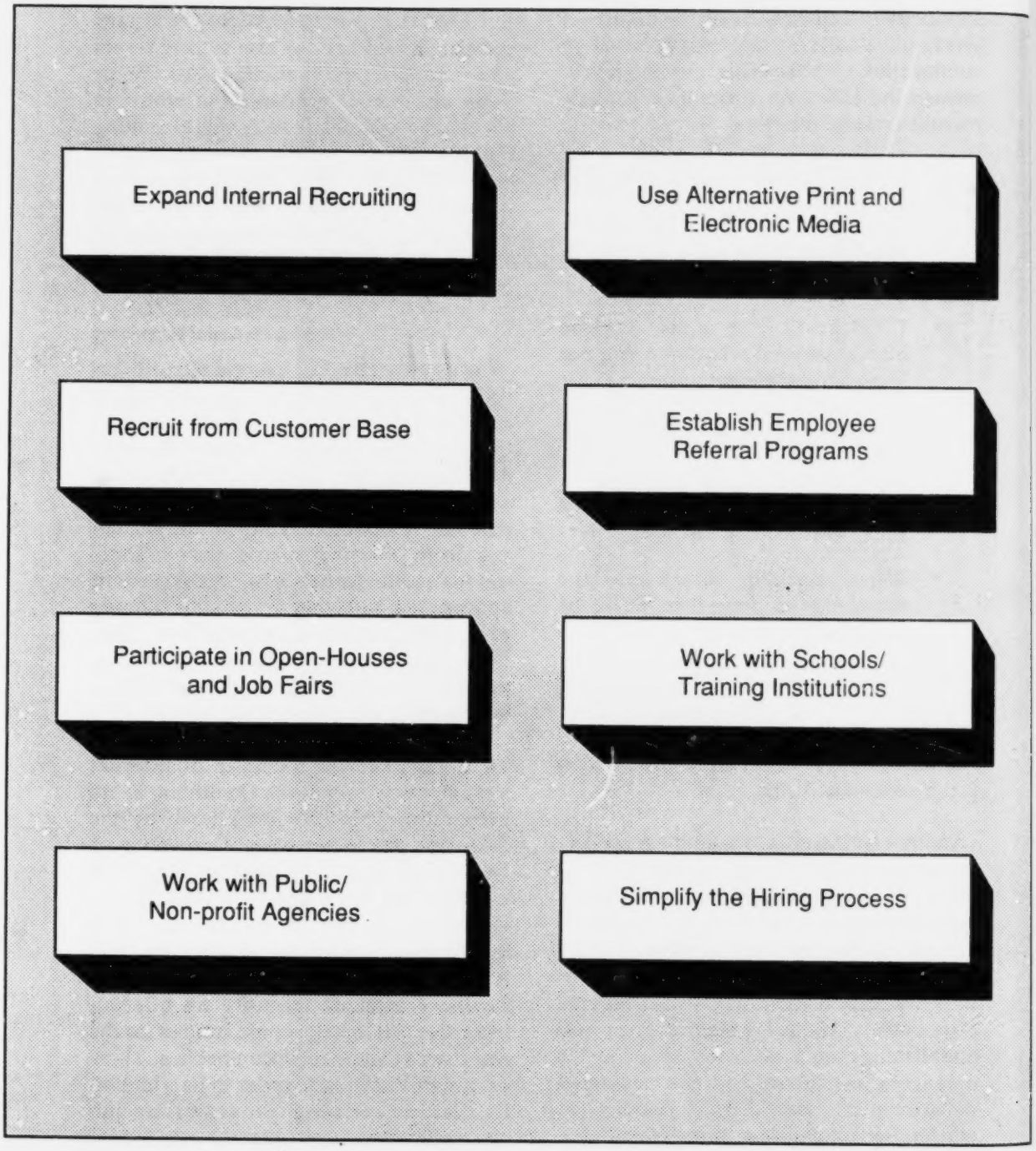
Because standard recruitment tactics will not always generate enough applicants, companies will have to turn to new tactics and improvements in existing ones. While there are several options from which to choose, they should all be geared at making the recruitment function more aggressive, targeted, and efficient. Exhibit 4 presents a number of innovative recruitment tactics that employers can use to build upon those already in place. These are discussed briefly below.

Expand Internal Recruiting

The usual method of internal recruiting is to display job openings in a company newsletter or on a bulletin board and wait for employees to apply. A more dynamic and effective approach is to actively seek out qualified or highly promising employees that may not be quite ready for the job, but are deemed trainable over time. These internal recruits can then be directed toward appropriate in-house or outside training programs, and then to their new jobs. Encouraging a broad-based application process and providing mobility assistance helps both the employee and the firm.

A good practical example of internal mobility assistance is the Qualifying Exam Preparation Programs established by the Alliance for Employee Growth and Development, a joint human resources venture between the Communication Workers of America, the International Brotherhood of Electrical Workers, and AT&T. These programs are designed to facilitate internal mobility by offering incumbents test preparation courses for the company's Qualifying Examinations. These exams are required in order to be admitted to certain training programs or job

Exhibit 4
Innovative Recruitment Methods


Expand Internal Recruiting
Use Alternative Print and Electronic Media
Recruit from Customer Base
Establish Employee Referral Programs
Participate in Open-Houses and Job Fairs
Work with Schools/ Training Institutions
Work with Public/ Non-profit Agencies
Simplify the Hiring Process

classifications. The program runs for 30 to 36 hours at an average per-worker cost of approximately $450.

To date, Qualifying Exam Preparation Programs have been implemented in about 150 company locations, enrolling close to 2,000 workers. As expected, participating workers fare better on their Qualifying Examinations than non-participants. Overall, about three-quarters of those who take the courses passed the company's Qualifying Exams compared to a 20 percent pass rate for those who do not. There is no doubt that the Alliance expects this result to facilitate worker mobility and build on the human capital investments already made in these individuals.

Use Alternative Print and Electronic Media

Innovative recruiting means reaching out to those who do not respond to traditional recruitment approaches regularly. Ads in alternative community newspapers and local neighborhood weeklies can broaden the applicant base substantially. Ads outside the help wanted section of the paper can also catch the attention of the casual job seeker.

Simplifying the application process as well as job qualifications can also help to attract more applicants. Ads should encourage a wide range of applicants and list only qualifications deemed absolutely essential for the job. Giving the company phone number instead of an address can also speed-up the hiring process, as can encouraging recruits to apply in person, without developing formal resumes. This can save valuable time, as the prescreening interview and application process can all be conducted at once, often on the day that the applicant sees the ad.

Some companies are making innovative use of alternative media such as direct mail, cable TV, radio, and electronic bulletin boards. Direct mail typically targets a group of skilled workers identified through professional associations or schools, but can be broad-based (as part of a larger cooperative business mailing). Cable TV and radio advertising is usually less expensive than other forms of electronic media, and helps target specific groups of workers who tune into specialized local stations. On-line electronic bulletin boards are also popular, mostly to post information on technically oriented jobs.

Recruit from the Customer Base

Point-of-purchase recruitment is effective when clients roughly mirror the characteristics of entry-level personnel. Fast food companies, for example, recruit from their customer base by placing flyers in take out bags. Managers should always be on the lookout for good employees, and right across the store counter is a good place to begin the search. Courteous customers make for courteous workers, and a tactful manager is in a good position to raise the issue of employment. Having a flyer or pamphlet available describing the company and its benefits increases the effectiveness of point-of-purchase recruiting.

Establish Employee Referral Programs

The high cost of recruitment agencies has led a number of companies to establish employee referral programs. Most rewards for a successful hire are cash, but some companies offer prizes, discounts, or gift certificates. Positions identified as having high costs per hire are sometimes targeted for rewards, or reward levels are increased for these hard-to-fill positions. Some managers may resist paying employees for information that might have been provided

without a reward, but this can be a short-sighted view. A formal program professionalizes the role of the recruiting employee, and implicitly holds that worker more accountable for the referrals that he or she makes.

Participate in Open Houses and Job Fairs

Open houses usually are held on company premises, and cast a wide net to potential employees. Job fairs typically are organized around a number of employers, and target particular kinds of jobs, such as clerical workers or computer specialists. The success of these events as a recruitment tool depends critically on the quality of marketing, including the pamphlets and displays made available, and the ability of the recruiter who is making that first contact. Open houses are most effective when refreshments are ample, and a targeted group of applicants is identified and solicited. Targeting potential applicants at an institution such as a school or senior center, and then providing transportation, helps to create a successful open house.

Job fairs have become popular, especially with small businesses, because they efficiently pool the recruiting resources of a number of employers in the same area. The organizer, such as a Chamber of Commerce or Private Industry Council, should be encouraged to take out a large newspaper ad, the cost of which is likely to exceed the entire monthly recruiting budget of a participating small firm. The fair allows for the speedy collection and review of applications and resumes, and saves the time of an initial pre-screening interview. Being prepared to market the company, and then linking with a well-organized and respected promoter, ensures that the cost of company participation -- often several thousand dollars -- is not wasted.

Work With Schools and Public Training Institutions

One of the most popular recruiting innovations is establishing closer ties with local schools and training institutions. The first step in this process is contacting the schools to find out what is available for employers. Many schools and training institutes maintain print and electronic bulletin boards, employment flyers, and internship programs. Networking with these programs helps establish employment networks at the entry level. The local or state Department of Education and the yellow pages can provide listings of often-overlooked local training institutions.

Many employers establish enduring relationships with workers that begin in the early school years. Providing summer jobs for high school students is not only inexpensive, but builds relationships for the future. Some high schools, and especially vocational schools, have placement programs for summer jobs. A part-time internship program for graduating seniors is a wise recruitment investment, which is likely to pay off the following year in permanent hires. The school newspaper is also an effective recruitment source. A well-timed ad in the late spring can generate a number of applications, especially if transportation is not an issue. Where transportation is problematic, car pooling arrangements among students facilitate summer work.

Work with Public Employment and Training Programs

The foundation of the public employment and training system is the Job Training Partnership Act (JTPA), enacted in 1982 and designed to build private sector involvement in both the oversight and planning of programs. Under JTPA, program planning and service delivery are

centered around local Service Delivery Areas (SDAs). Each SDA has a Private Industry Council (PIC), the majority of whose members comes from the private business community.

The PIC is responsible for strategic planning and oversight of local programs. As discussed earlier, the effectiveness of these community-based programs, and the involvement of the private sector in them, relies substantially on the creativity and leadership of the local business participants. A call to the Mayor's Office, Town Hall, County Board of Supervisors, or Chamber of Commerce will lead to information about PICs and local training programs.

JTPA provides federal funding for serving the "economically disadvantaged" as well as all workers displaced from their jobs. Eligibility is defined quite broadly.[4] Some funds are reserved for older workers, youth, and summer youth programs; and a portion of the money can be used to aid persons who are not economically disadvantaged or job-displaced, but who have experienced barriers to employment (such as difficulty speaking English, lack of education, and the like).

The focus of federal assistance under JTPA is on training, including, for example, school-to-work programs, classroom training, on-the-job training (OJT), and job search assistance. Consistent with the business orientation of the legislation, many PICs offer employers latitude in selecting participants and in developing training programs. Under OJT, the SDA will finance one-half of the trainee's wages for a period of up to six months.

The program is flexible enough that it is possible for employers to develop recruitment and training-based initiatives on their own or in coordination with the SDA, and then seek cost-sharing assistance when training eligible individuals under the program. Such arrangements allow for the program to serve the individual needs of particular businesses. The local PIC can also serve as the hub of small business partnership efforts in the area of child care, recruitment, transportation, and basic skills upgrading.

New Recruitment Incentives

In addition to expanding recruitment tactics, many companies are also developing incentive programs and policies to attract new employees. These include direct educational support, flexible scheduling and benefit policies, and dependent care programs. Some employers have even experimented with transportation assistance and housing support as well. In the chapters on basic skills training (Chapter Three) and dependent care programs (Chapter Four), these benefits are described in detail. What follows are some examples of innovative "carrots" to enhance recruitment.

Direct Educational Support

While many companies provide tuition reimbursement programs, until recently educational support was rare for part-time and service workers. In addition, tuition reimbursement programs available for entry-level workers are often limited in the number of courses supported, and the financial burden of paying for the course and then being reimbursed is often too great for many younger workers. As a result, modifying existing or introducing new educational benefits can contribute to more effective recruitment, especially in those industries and occupations where benefits are limited, restrictive, and/or non-existent.

Educational Assistance at the Detroit Burger King

There are ways of designing educational assistance programs which are in the direct service of human resource goals. An example is the innovative education benefit implemented by the Burger King in downtown Detroit. In 1986 the manager was facing a turnover rate which was consistent with the rest of the fast-food industry--179 percent. With each position turning over almost twice per year, and training and recruitment costs estimated at $1,500 per hire, he first attempted to solve the problem by adjusting wages and working conditions, but was unsuccessful. Many of the best workers were quitting jobs not simply because the pay was too low, but because they wanted to attend college.

The education plan that was implemented was intended to have a dramatic, immediate, and lasting impact on recruitment and turnover -- and it worked. According to an independent study, the annual turnover rate among users of the benefit in 1987-88 was only about 58 percent, much lower than the 240 percent rate for nonparticipants. Inflation-adjusted productivity, measured as sales per employee hour and customers per employee hour, increased about 3 percent. Adequate crew size was more easily maintained with improved recruitment and reduced turnover, and the district manager's quality rating of the store improved by 7 to 10 percent.

The key to the Detroit Burger King's success was tailoring the educational benefit to meet the particular needs of the employees -- mostly young, part-time workers from the city. The manager rejected the Burger King chain's benefit, which was a standard tuition-reimbursement program tied to job tenure, in favor of his own plan. After meeting with representatives of two local community colleges, he arranged to make payments directly to the colleges to cover both tuition and book charges for his workers. Benefits are available upon the day of hire, with the number of courses paid for dependent upon the number of hours worked per week. Based on the success of the model, it has been adopted by other local employers of young, part-time workers.

Flexible Scheduling and Benefit Policies

Introducing flexibility into the workplace is important to many new recruits, such as working mothers and older workers. Flexibility can be built into work in many ways (and is discussed in detail within Chapter Four). For example, traditionally, workers in many industries are either not allowed to work part-time, or are granted part-time work reluctantly, after making themselves invaluable as full-time employees. These attitudes are changing slowly, as employers realize that large segments of the workforce desire flexibility from the first day on the job.

Often, students, parents, and retirees prefer part-time work or flexible work hours. Employees with dependents are increasingly working at home or sharing a full-time job with another part-time worker. Flexibility does tend to reduce management control, but should not be resisted based on that criterion alone. The challenge of managing a diverse, flexible workforce must

be balanced against the benefits of recruiting and retaining high-quality workers.

Pro-rated benefits for part-time workers are an effective recruitment tool as well. These include sick leave, health care benefits, and vacation pay. Offering flexible work hours and pro-rated benefits sends a signal to potential part-timers that they will not only be accepted, but that they are welcome to join the company on a long-term basis.

Dependent Care Programs

These benefits include assistance for elderly dependents (elder care) as well as child care. Dependent care programs are an excellent recruitment device and need not be costly. The most common form of this type of benefit is an information and referral service, wherein employees work with knowledgable experts to develop a dependent care strategy. The company subsidizes the cost of the referral network, either at an annual fixed rate or on a per-referral basis. The benefit is both useful to the worker and inexpensive for the company.

Other relatively inexpensive dependent care benefits include establishing a pre-tax salary deduction plan, and holding an information fair. In addition, there are more elaborate options such as on-site day care. Even here, costs can be reduced substantially through involvement with public agencies and other businesses.

Improving Applicant Selection

Screening methods used by companies range from informal interviews to batteries of objective tests; from calling a few references to the use of outside preemployment screening services. Standard steps in the screening process can include but are by no means limited to: 1) evaluating resumes and applications; 2) conducting preliminary screening interviews and quantitative testing; 3) in-depth job interviews; 4) reference checks and background investigations; and 5) physical examinations. However screening and selection are structured by a company, it is critical that they operate efficiently and facilitate correct decisions.

Several steps can be taken to improve the match between workers and jobs. Standard functions such as reference and fact checking, for example, should become routinized and conducted efficiently. Much information on resumes and job applications can be exaggerated or false, but can be verified easily. Colleges will not report grade point averages, for example, but will verify attendance.

References provided by applicants are another valuable source of information and should also be checked routinely. A small investment before the hire can save the time, headaches, and money associated with a bad decision. Calling references not only helps identify weak candidates, but can highlight the strongest candidates from what was previously an undifferentiated group.

No matter what screening methods are used, the standard selection approach is usually the competency-based model. Competency-based selection procedures provide a sound basis for determining which job applicants are most suited for employment in a specific job or family of jobs. The approach is based on the use of specific criteria related to good performance usually found in high-performing incumbents. The process itself can be very formal and involve candidate testing, or it can be informal. For example, the owner of a small manufacturing company in New England requires his line personnel to be

"industrially housebroken," in that they have been previously employed in a blue-collar setting, and are aware of the general hazards and house-keeping practices required in such jobs. He found that this was the single most important applicant trait associated with success on the job in his plant.

The most effective way to utilize competency-based selection is to develop a set of minimum qualifications that are related directly to the key tasks performed on the job. This type of functional approach to selection provides several benefits. It ensures that prospective employees will be selected on the basis of criteria that are relevant and accurate predictors of future job performance. It also directly links the recruitment and selection process to existing jobs in a meaningful way that is intuitively appealing to employees and their supervisors.

One objective way to use a competency-based selection process is through applicant testing. Objective paper and pencil testing is making a comeback for several reasons:

- **A favorable legal and regulatory environment that no longer discourages objective testing.** In 1988, the Supreme Court reaffirmed that objective testing should not be treated differently from interviewing and other selection devices within discrimination cases. The burden of proof of discrimination is on the employee, not the employer.

- **Tests have been proven nondiscriminatory.** There is now consensus within the research community that a wide variety of validated, job-related testing instruments are fair and do not discriminate against minority group members.

- **Reductions in the cost of testing.** Testing companies have developed off-the-shelf, valid tests which are occupation-specific. Even small companies, with the help of experts, can get into the testing business for as little as a few thousand dollars.

Testing is, however, a relatively complex function, and companies should consult with experts in establishing a program. The sine qua non of a valid, effective test is that it is a good predictor of performance on the job.

There are two basic kinds of employment tests--personality and skill tests.

Personality Tests

These tests seek to measure qualitative behavioral worker traits that are important in particular jobs. For example, certain technical jobs require preciseness while others require flexibility. Valid personality tests assess applicants along these and other job-related dimensions. Testing experts start with jobs, identify those worker characteristics that are correlated with good job performance, and then test for these characteristics among the applicant pool.

Ability Tests

Ability, or skill tests, are in greater use than personality tests, mostly because they measure skills directly, are relatively easy to implement, and are inexpensive. Job-related ability tests mirror the skills and tasks needed on the job and also support a functional approach to training. To better tie the tests to jobs, some experts have developed tests along occupational lines, such as clerical or managerial. Thus, the skills measured vary with the occupation.

Testing is not a substitute for other screening devices, but developing a testing program can help reduce two kinds of errors made in the selection process. The first error is selecting someone who is ineffective on the job (a "false positive"). This is costly for the reasons specified above--low productivity and increased turnover during the probationary period. The second error, as costly as the first, is rejecting an applicant who in fact would have performed well on the job. In a labor shortage environment, companies can ill afford to reject good applicants. Moving away from subjective criterion toward objective testing is one way of reducing the number of "false negatives" in the selection process.

The Appendix to this chapter provides a more detailed discussion of establishing a workplace testing program.

Broadening The Recruitment Net

While more efficient staffing can help address labor and skill shortages, it will also be important to consider new sources of labor. Since the overall availability of workers is declining, employers will have to turn increasingly to new population groups to meet entry-level staffing needs, including new labor market entrants, older workers, and those who are not as easily employed as workers were in previous years. Exhibit 5 highlights specific sub-groups that comprise the diverse workforce available for hire. While these groups represent a source of recruitment opportunity, they also pose new challenges for employers.

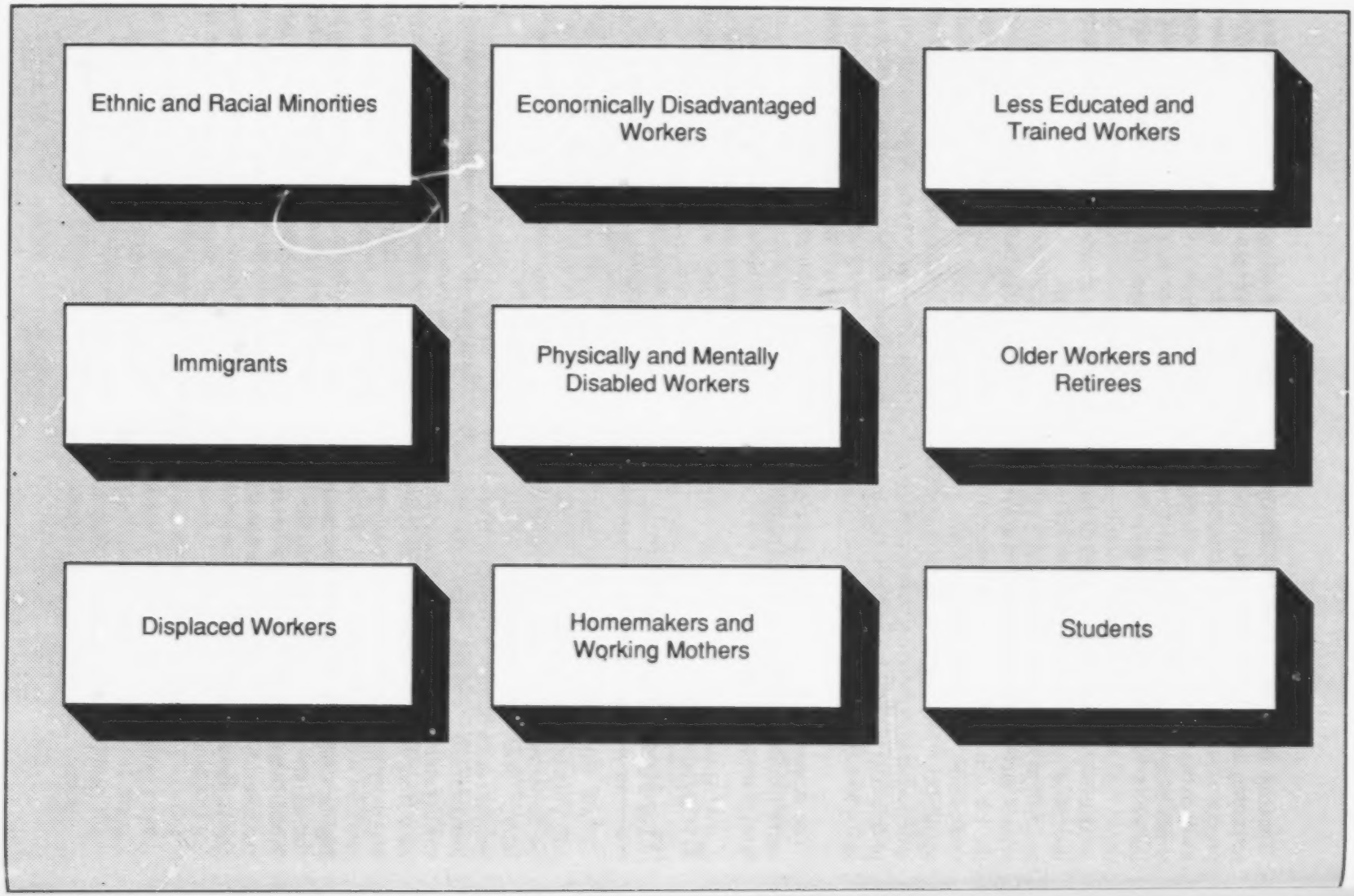
The first challenge is that new entrants are a very diverse group with varying recruitment, retention, education, and training needs. As a result, no one single solution will be sufficient to address the needs of the large numbers of women, minorities, and immigrants that are expected to account for the majority of labor force growth.

The second challenge is that many new recruits will continue to come from economically or educationally disadvantaged backgrounds. While the need for basic language, math, and reasoning skills has never been more apparent, many of these workers are often not prepared to meet that need. According to the President of BellSouth:

> In 1987, fewer than 30 percent of employment candidates met our skill and ability requirements for sales, service and technical jobs. Only 15 percent scored at the proficient level on our typing test, and almost 50 percent of those tested were not qualified for jobs requiring even light typing. Over all, we estimate that fewer than 1 in 10 applicants meets all our qualification standards.[5]

Companies faced with labor or skill shortages must make a decision about how they will broaden their recruitment net and find ways to employ new labor market entrants. With creative planning, these new employees can be matched to emerging jobs in cost-effective ways. Based on results from the ASPA Labor Shortage Survey cited earlier, companies that are targeting "non-traditional" applicants are generally finding that their recruitment effort is a successful one:

Exhibit 5
The "Diverse" Work Force



Firm Experience With Using New Sources Of Labor

Non-Traditional Applicant Pool	Percent Who Target	Of Those Who Target: Percent Reporting at Least Some Success Attracting Applicants
Students	53%	87%
Retirees	43	65
Homemakers	36	71
Physically disabled	30	55
Economically disadvantaged	28	64
Military	20	67
Immigrants	18	62
Mentally disabled	16	36

Source: 1988 ASPA Labor Shortage Survey, American Society for Personnel Administration, Alexandria, VA, 1988.

While the recruitment effort from these groups is generally successful, only a relatively small fraction of companies are making use of this alternative labor pool. The remainder of this chapter reviews four steps companies can take for recruiting non-traditional workers, including:

1. Tailoring recruitment tactics;
2. Partnership programs to build basic and other related skills;
3. Modifying selection practices; and
4. Integrating new hires within the workplace.

Tailoring Recruitment Tactics for a Diverse Work Force

To reach out to a diverse workforce, recruiters must be flexible and creative. They must recognize that reaching different applicant sub-groups will require specific and targeted recruitment strategies.

The clearest signal that companies can send about their openness is a message at the bottom of want ads: "An Equal Opportunity Employer." This simple message notifies a broad-based populace that the organization welcomes applications from every qualified member of the labor pool. More specific messages such as "handicapped accessible" accentuate the basic theme, as do visual advertisements which include workers representing several demographic or other segments of the labor force. In developing such advertising, companies are bound by the law not to favor particular groups. The message should be inclusive, and cannot be exclusive.

A second basic approach is to make internal commitments to diversifying the employee base, not just the applicant pool. Since so many job referrals come through incumbent workers, a heterogeneous staff is virtually self-perpetuating. Companies establish reputations in communities in large part through their record of hiring, not through their promises about future staffing patterns. Intense efforts to diversify now

can ease recruitment pressures in the long run.

When targeting specific groups of workers, the most effective approach is to work through the institutions which serve their communities. These networks of public and private institutions include senior centers, local Private Industry Councils (PICs), the Job Service, church groups, charitable organizations, advocacy groups, community centers, and neighborhood business associations. Each group will have its own set of recruiting issues:

Economically disadvantaged workers

Transportation to and from work is often a stumbling block, and if transportation assistance is available, this information should be included in recruitment literature. In addition, disadvantaged workers are not likely to be reached through generalized want ads or private employment agencies. As a result, it will also be important to bring recruiters to these prospective employees. Since low-income workers usually qualify for a number of public employment and training programs, employers can contact local Private Industry Councils (PICs) for recruitment advice and information on available services and workers. Working with the PIC is an effective and inexpensive way of reaching the low-income labor force.

Workers with limited skills and/or education

Many less-educated workers search for jobs at state employment offices. Make sure that jobs are posted with the employment office, and that vacancy information is updated on a regular basis. Adult education centers are another good source of supply for motivated but less-educated and trained workers.

Immigrant workers

Recruiters who speak the native language and can develop contacts in the community are most effective in reaching immigrants. Not-for-profit organizations and local PICs have funds available for developing recruitment and training programs for immigrants. A bank in Rhode Island, for example, worked with local organizations to develop a combined English as a Second Language/Teller Training program. The not-for-profit organizations were responsible for recruitment, while the bank participated in the screening process.

Physically and mentally disabled workers

Rehabilitation agencies and disability organizations are a prime source of disabled job applicants. These organizations can also be a source of funds for training as can local PICs. Local and state agencies for the disabled can provide information on available programs and services for this population.

Older workers and retirees

Older workers can be reached through agencies and organizations which serve them, as well as through the publications and electronic media that they read and watch. Since many of these potential workers may not be actively looking for jobs, classified ads are not the most productive recruitment device. As with other kinds of workers, hiring seniors into visible positions in the company helps to attract other applicants in that age group. Seniors also recruit effectively from their cohort.

Dislocated workers

Since 1982, the federal government has made funds available to employ and retrain workers who have lost jobs through plant closings, business failures, and large-scale layoffs. These dislocated-worker programs are coordinated through state employment and training agencies. The state agencies often fund programs operated for specific groups of laid-off workers (such as those from a particular local plant). Contacting these programs directly provides access to experienced and available workers, many of whom possess valuable skills. Call the state employment and training office and ask for information on dislocated worker programs.

Homemakers and working mothers

There are two essential strategies for reaching individuals with dependent care responsibilities--market workplace flexibility and dependent care benefits. The rigidity of the work day and the high cost/restricted availability of dependent care are the main stumbling blocks for those who have home responsibilities, but want to establish long-term employment relationships. Companies that advertise flexibility and innovative benefits, and deliver on these promises, clearly are taking the lead in attracting this vast pool of workers.

Students

Many companies hire high school and college students as part-time workers, but few recruit in ways that make optimal use of the academic year schedule. Students are generally free to work full time about four months out of every twelve, and many can be flexible about combining work with school.

Partnership Programs to Build Basic and Other Skills

While broadening the recruitment net will likely increase the number of job applicants, many new recruits will not be able to meet minimum entry-level qualifications. As has been reported by an increasing number of employers, greater shares of new entry-level hires are deficient in the most basic elements of job skills, including reading, writing, and math. These deficiencies lead to lower-than-expected job performance, as well as an inability to participate in entry-level skills training successfully.

An increasingly popular solution to this problem is offering basic skills training in job-related reading, writing, and math. Often as a condition of permanent hire, employers are providing new employees with up-front basic skills training. These types of training programs are often a prerequisite for enrollment in on-going, regular training, and have been shown to be an effective tool for employing non-traditional workers successfully.

The discussion below focuses on public-private partnership programs that employers can develop to upgrade the skills of new entry-level workers. The next chapter provides a detailed discussion of key issues in establishing workplace basic skills programs.

Partnerships with the Public Employment and Training System

The public employment and training system consists of a variety of state and locally administered programs. Most of these programs, such as JTPA, are authorized, regulated, and funded by the federal government, although many states have added their own funds to these programs and started new ones themselves.

Some states, for example, have established workplace literacy offices which coordinate funding and assistance for workplace basic skills programs. These services range from providing information and teacher training, to sharing substantially in the financing of the training itself. In Mississippi, the state literacy office is developing a set of "turnkey" materials for employers who wish to create basic skills training programs. The employer-provided programs will qualify for state basic skills tax credits. The guidelines for developing programs which qualify for the tax credits are flexible, in an effort to broaden the range of participating employers. The Literacy Office works with employers to cut red tape, and to make it as easy and inexpensive as possible to set up a workplace basic skills program.

While the existing array of public programs vary in their specific objectives, targeting requirements, and allowable activities, they share the common goal of facilitating the employment of most of the country's disadvantaged groups, such as poor and low-income single mothers. As such, they represent a viable source for employers faced with the need to hire individuals with limited basic skills, work experience, or training.

School-to-Work Programs

Partnerships with local schools are another option for improving the skills of entry-level hires. In the past several years a range of companies have pursued joint programs with local vocational and general academic high schools to ensure an adequate pipeline of job-ready entry-level personnel. The Boston Compact and the Detroit Compact are two well known examples of partnerships between the business community and local schools. In Detroit, the Chamber of Commerce works with the city's schools to administer a payoff program for all students who maintain at least a C average and a 90 percent attendance rate. For these students, a job or a college scholarship is guaranteed upon graduation.

The school-to-work model has the advantage of both cost-sharing and developing contacts with youth that can pay off in terms of future recruitment of permanent employees. The challenge is to motivate students so that they see a concrete relationship between school programs and their future job prospects. Beyond "Compacts" connecting school performance to local job offers, other less complex partnerships include mentoring programs, cooperative education programs, internships, and setting up "academies" and curricula in local schools based on the requirements of jobs in area industries.[6] Local PICs and Chambers of Commerce are good starting points for obtaining information on such partnerships.

Tax Credits for Broadening the Base

Hiring from the economically disadvantaged or physically disabled community can also have straightforward benefits on the bottom line through the Targeted Jobs Tax Credit (TJTC).[7] This program is administered through local offices of the U.S. Employment Service. For each employee certified as qualified for the credit, the company can generally reduce its taxes by an amount equal to 40 percent of wages during the first 12 months of employment, up to a credit of $2,400 per certified employee.[8]

Employers cannot retroactively claim the credit -- the worker must be certified eligible upon the day of employment; if the worker is not pre-certified by the Employment Service, the company must request in writing a determination of certification by the fifth day following the hire. Either the potential hire receives a voucher from the

Employment Service and presents it to the employer, or the employer requests that the Employment Service review the applicant for certification.

Although only one in one-hundred companies currently claims the credit, this number could increase as employers learn about the tax advantages and make use of the cost-saving potential of TJTC. Trop World Casino only learned about the program in 1989 and by November of that year had hired 400 targeted workers. Large firms like Texas Instruments also use the tax credit.[9]

Modifying Selection Practices

To reap the benefits of basic skills investments and job-related training, companies must develop effective ways of selecting workers from a changing, shrinking, and in many ways more challenging applicant pool. Standard selection practices are coming under increasing pressure, since they have been established to replicate the existing set of productive workers in a company. When new recruits have different backgrounds and characteristics than those of high-performing incumbents, screening systems may need to be modified.

Problematic Selection Criteria

Through experience, employment interviewers look for a set of competencies that they know are prevalent in their best incumbents, traits which typically go beyond education, work experience, and the other basic qualifications that show up on job applications and resumes. These more subtle and intuitive signals of future performance are centered around applicant appearance and behaviors, such as dress, grooming, speech, demeanor, manners, and attention span.

When the applicant pool is broadened, that diversity will be reflected in new patterns of appearance and behavior. Faced with unfamiliar kinds of jobseekers, interviewers may find that their intuition concerning an applicant's employment potential is of limited use since it is based upon several physical and behavioral characteristics, such as dress and speech patterns, not common among many new recruits. As a result, many of the less formal but still important standards used by interviewers will come under as much pressure as the more formal criteria of educational qualifications and test scores. For these reasons, a major challenge faced by employers is to modify their interviewing procedures to better fit with the characteristics and abilities of new recruits.

Developing New Screening Systems

When faced with an apparent mismatch between jobs and job applicants, a company has two basic options, which are not mutually exclusive--modify the job or develop the capabilities of the worker. Inherent in these options is changing basic screening criteria themselves. If job tasks are modified, there is a related adjustment in the required minimum capabilities of workers. Whether jobs are altered or not, gaps may remain between the job requirements and the skills of the worker.

In the face of skill gaps, screening requirements may need to be modified. One way is to redefine acceptable job candidates as those that meet minimum standards of employability or trainability, as opposed to those that have mastered all of the required job skills at the point of hire. This can be done by selecting applicants whose score on a screening test is at or above some **reduced minimum threshold**, or by breaking available jobs down into their component requirements and selecting applicants

whose skills do not fall below a minimum requirement level. In either case, screening for "trainability" often means being prepared to either offer up-front remediation, or to lengthen the traditional three- to six-month probationary period.

For reasons of efficiency and competitiveness, companies can ill afford to compromise on productivity. As a result, many firms are taking innovative steps to ensure that those hired can be integrated into the workplace smoothly and productively. Some are using screening as a two-part process--the traditional task of deciding whom to hire, and the assessment of gaps between the requirements of jobs and the competencies of new hires. For a given set of jobs, workers are being selected based on being either job-ready or trainable. Other firms are introducing basic skills programs for new "trainable" recruits based upon functional job requirements. While slow to emerge in the workplace, these efforts hold the promise of increasing the availability of qualified employees for jobs that may have gone unfilled for protracted periods of time.

Some companies are also experimenting with testing for the first time, and are finding that objective tests are a relatively precise set of instruments. Tests allow for more accurate selection than simple screens based on educational level or work experience. A well-thought-out test battery is being viewed increasingly as a valuable aid in the selection of trainable entry-level staff with interests and potential skills that match job content.

Despite their attractiveness as objective predictors of performance, selection tests have their limitations. Tests do not always measure motivational levels well, are more accurate at predicting failures than successes, are more predictive for groups than for individuals, and can create anxiety on the part of the test taker.10 Especially in a labor shortage environment, there are costs associated with false negatives -- incorrectly screening out individuals that could have become productive employees. By rigidly applying tests to screen out low performers, some potentially high performers will be rejected. So it makes sense to use testing flexibly, both to define minimum competencies and to design training strategies. (See the appendix to this chapter for more information on implementing a workplace testing program.)

Increasing the Effectiveness of the Job Interview

Relying on a more diverse applicant pool requires changes throughout the screening process, up to and including the employment interview. Interviewing is both the most common and potentially the most subjective approach to selecting workers. As the focus of the interview broadens from work experience and educational background to growth potential and trainability, errors in judgement can increase, since "potential" is difficult to measure. As a result, interviewers should be made aware of the fact that individuals need not be completely "job-ready" on the date of hire.

In addition, personal characteristics of interviewees should not have a disproportionate impact on the judgement of the interviewer. These include dress and demeanor. Interviewers must learn to avoid stereotyping and search for meaningful information related to future job performance. For example, future customer service representatives need not be neatly attired at the interview, necessarily, but the interviewer must determine whether or not the applicant is receptive to the idea of being fastidious in dress on-the-job. This is, broadly defined, an example of screening for

trainability, as opposed to measuring observed competencies at the time of hire.

Brief interviews often lead to premature judgements, as when an actress shines during her audition but turns out to be inappropriate for the part, or when a mathematically inclined applicant panics when asked a straightforward multiplication question during an interview. The increasing cost of rejecting potentially productive employees suggests extending the probationary training period for new hires, to give them every chance to come up to speed. Multiple observations of a worker deemed marginal in an interview help to sort out the trainable from the untrainable. Good workers -- even those with some deficiencies -- are difficult to replace.

Integrating the New Hire Into the Company

Investments in recruiting and hiring new kinds of workers can be lost if the recruits do not blend well with incumbent employees. Along with diversification comes an increased need for building flexibility and tolerance among existing employees, and for developing programs to support the new hires.

Modifying Initial Placement Practices

Once hired, most workers begin a probationary period which includes employee orientation as a first step. Orientation in many companies -- and especially in smaller ones -- is a brief, sometimes informal process. A traditional orientation will cover the basics of employee benefits and company policies, often in as little as one hour.

Most orientations assume that the worker is job-ready, in the sense that he or she will be able to read the orientation materials, has the basic skills to do the job, and is a reasonably good fit with the company and its culture. However, given the reduction in the number of new hires that are meeting traditional qualification standards, these assumptions must be re-evaluated.

Additionally, implicit in the standard conception of orientation is the notion that the company has certain norms and expectations which the applicant, once informed of these standards, will be able to meet. If many of the new hires are not job-ready, then the purpose and format of orientation may have to be changed as well.

One approach is to introduce more elaborate orientation programs, such as those that became popular in the 1970s and 1980s, including a well-known experimental design administered and publicized by Texas Instruments (TI). The innovative TI approach included a seven-hour socialization program on career management and strategies for advancement. Evaluation results from TI indicated a low rate of turnover among those new employees who had participated in the program; subsequently there has been a keen interest in orientation among human resource professionals. Relatively well-developed programs, designed to increase productivity and reduce turnover, are now in place in larger companies such as Corning Glass Works and the Disney Corporation.11 Although expensive, these programs can serve as models for small employers that wish to develop more structured orientation programs for new employees.

Basic skills and related programs for entry-level workers is another example of how companies are adjusting the initial placement phase for new recruits. In this case, the probationary period is expanded beyond its traditional role of assessing employee competencies; the first year is increasingly seen as a time to develop needed job skills. Observed deficiencies, rather than being viewed as failures, are remediated through company assistance. In consequence, the assumptions underlying the initial placement process are changing. The challenges of the initial hiring period are as much on the shoulders of the company as on the employee. Correcting mismatches between the worker, the job, and the company are to be expected, and the goal is to alleviate these mismatches and integrate the new hire into the existing work group.

Finally, the new environment has created an additional managerial task--managing diversity. Managers must learn how to handle the special concerns of working parents with complicated daily schedules; of immigrants who may have trouble communicating in English; of high school dropouts wary of classroom-based training; and of other groups who may not readily fit with an organization's culture. Just as many new employees will need to be enculturated to the workplace, managers must also be trained to manage the diverse workforce.

Some Model Programs

At Ortho Pharmaceutical, a subsidiary of Johnson & Johnson, high turnover rates and low representation in upper management of women and minorities led executives to undertake efforts to change the company culture. The goal was greater assimilation of less-represented groups into the management ranks. Executives began by hiring an outside consultant to conduct three days of managing diversity training for all members of the upper-level management team.12

The training at Ortho was made up of awareness-raising exercises to help participants understand their own attitudes about race and sex, and to demonstrate how one's personal views influence decision-making and other institutional behavior. Trainees also discussed what measures could be undertaken to effect change. Management personnel who took part in the training disseminated what was learned throughout the company, and began promoting the idea of valuing diversity. This turned out to have little effect, so the same training course was extended to all employees--one level at a time. In addition, managers wanting special help in their departments were given assistance in developing customized diversity training programs, including access to training films and literature.

The Procter and Gamble (P&G) corporation has a diversity program that involves many distinct activities in the company.13 The effort is decentralized, allowing individual facilities and departments to arrive at their own solutions to managing diversity. Nonetheless, support from corporate managers has been invaluable in encouraging facilities to pursue diversity programs. The responses include multi-cultural teams to advise top management, special relationships with black colleges, and minority working conferences. One division of the company implemented an "on-boarding" program for new hires, in response to the extended time that black women and other minorities needed to become acclimated into their jobs. The on-boarding program provides special training for women and minority employees and for their managers.

For the smaller firm, integrating the new hire into the company culture need not be expensive. Several businesses have taken the simple step of appointing individuals or committees to facilitate communication between minority workers and company management. Digital Equipment Corporation adopted a policy of valuing differences which it wrote into its corporate charter.14 The company established a Manager of Valuing Differences to facilitate implementation of company policy. Digital is launching a training initiative that aims to provide every employee with the resources and preparation needed to take full advantage of increasing workplace diversity through the 1990s. The company has a large number of trainers, many of whom have gone through courses at its Affirmative Action University.

High turnover, lack of career mobility, and problems between employees from different ethnic or racial groups have created the impetus for workplace diversity programs. Businesses are moving away from the attitude that hiring minorities and women is the equitable thing to do, toward a belief that hiring, training, and retaining a broad worker constituency is the efficient thing to do. Through the establishment of support groups, buddy systems, and formal orientation programs, companies are learning how to celebrate differences within the company culture, and in doing so raising the productivity of both incumbents and new hires.

Chapter Endnotes

[1]"1988 Human Resource Effectiveness Report" (The Saratoga Institute). The 1988 report was based on 319 company surveys.

[2]Adam Seitchik and Jeffrey Zornitsky, From One Job to the Next: Worker Adjustment in a Changing Labor Market, (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research), 1989.

[3]These results are from "1988 ASPA Labor Shortage Survey Report" (American Society for Personnel Administration, Alexandria, VA).

[4]The "economically disadvantaged" include welfare recipients and their families; those whose family income is below the poverty level for the 6-month period prior to application; publicly subsidized foster children; and adult handicapped individuals whose incomes meet eligibility criteria, but whose family incomes may not. Dislocated workers (or equivalently, displaced workers) are those who have been terminated or laid-off because of a plant closing or reduction in force, or are long-term unemployed and have limited opportunities for employment or reemployment in the same or a similar occupation in the area in which such individuals reside. Individual states can restrict or extend the definition of displaced workers. For more information see "The Job Training Partnership Act," The U.S. National Commission for Employment Policy, September 1987 (Washington, D.C.: U.S. Government Printing Office).

[5]As quoted in The New York Times, September 25, 1989.

[6]"Companies Step in Where the Schools Fail," The New York Times, September 26, 1989.

[7]The targeted groups are: vocational rehabilitation referrals (defined as those with a physical or mental disability who have been referred to the employer while receiving or after completing state-approved vocational rehabilitation services; the economically disadvantaged, including youths aged 18 through 22, co-op students aged 16-19, summer youth employees aged 16-17, and Vietnam-era veterans; and recipients of various types of public assistance. See "Present Law and Issues Relating to the Targeted Jobs Tax Credit," Joint Committee on Taxation Staff, May 24, 1989 (Washington, D.C.: U.S. Government Printing Office).

[8]The credit can only be taken if the worker is employed for at least 90 days or a total of 120 hours. That part of wages which is claimed as credit cannot be deducted as a business expense for tax purposes. More liberal credits and minimum work guidelines apply for economically disadvantaged summer youth. Contact the local office of the U.S. Employment Service for more information on using the credit.

[9]"Labor Letter", The Wall Street Journal, November 7, 1989.

[10]Caruth, Donald L., Robert M. Noe III, and R. Wayne Mondy, Staffing the Contemporary Organization, (New York: Quorum Books), 1988, chapter 9.

[11]See Ron Zemke, "Employee Orientation: A Process, Not a Program" (Training, August, 1989), pp. 33-38.

[12]See Lennie Copeland, "Valuing Diversity, Part 2: Pioneers and Champions of Change" (Personnel, July 1988), pp. 44-49.

[13]Ibid.

[14]Ibid.

CHAPTER 2 - APPENDIX

ISSUES IN DEVELOPING A WORKPLACE TESTING PROGRAM

The information presented in this appendix is designed to acquaint employers with key issues surrounding the design and implementation of workplace testing. Three specific issues are addressed, including:

- The Uses and Benefits of Workplace Testing
- Alternative Types of Tests
- Implementing a Testing Program

The Uses and Benefits of Workplace Testing

Although long the province of psychometric experts, workplace testing has become an increasingly useful management tool for assessing job applicants, new hires, and incumbent personnel. When used judiciously and in consort with other assessment devices, paper and pencil tests are a cost-effective way of screening for hire and promotion, and identifying deficiencies which can be remediated through training. While virtually all companies interview applicants as part of the screening process, an increasing number of businesses are supplementing their interviews with objective testing.

The resurgence of testing as a screening device has been sparked by three factors: 1. a more favorable legal and regulatory environment that no longer discourages objective testing; 2. a growing consensus within the professional testing community that formal tests are not inherently biased against minority group members; and 3. a reduction in the cost of test administration and evaluation. One testing expert estimates that:

> Ten years ago, if an employer called us and wanted to put together a test battery for salespeople or copywriters or fill-in-the-blank, we told him it would take $100,000 and six months. Now we're talking about $6,000 and a couple of weeks.[1]

The conventional wisdom is that testing is most efficient when the selection ratio of hires to applicants is low, and companies need a cost-effective way to pare down the applicant pool. However, the recent increase in formal testing programs has occurred during a period when the growth of the entry-level workforce has slowed considerably. What managers are finding is that making the wrong hiring decision is costly, as is placing the right person in the wrong job. These risks can be reduced by carefully evaluating both people and jobs.

Testing is becoming a more common part of human resource systems in an effort to improve the match between employer and employee. Testing can be thought of as facilitating the development of a human

resource map within the company that identifies the requirements of jobs and the aptitudes and abilities of the workforce.

When the human resource system is mapped out with a systematic analysis of jobs and people, it becomes clear that testing can be taken beyond its traditional role as an effective screen for new hires. Testing can be used to facilitate job mobility and design effective training programs. Since the benefits of training are maximized when trainees' needs are documented clearly, the training function can be enhanced through well designed job-related testing. Testing can also help assess when a worker is ready for promotion. In this context, testing can be viewed as a tool for career enhancement. Despite the challenges involved with developing an effective assessment program, many companies are finding it well worth the investment.

The benefits of testing are greatest when workers are viewed as long-term investments. When technology changes jobs or automates them away, employers can choose to train or retrain existing workers in new skills rather than replace them with new workers. This is facilitated with accurate information about where incumbents will best fit into the company's new job structure. For most workers, careers develop like branches of a tree -- not like rungs on a ladder. When many career paths are possible or new ones emerge, testing can help managers decide where human resources within the company can be most efficiently and effectively applied. Investing in workers also implies that the initial hiring decision is a serious one with long-term consequences, and that careful screening for job-related personality and ability traits is cost-saving in the long run.

Alternative Types of Tests

The most positive recent development in the field of testing has been the movement to establish assessment instruments that are tied closely to job requirements. Prior to this innovation, employers were rightly skeptical about the utility of psychologically oriented personality profiles or classroom-type basic skills tests. Workers subject to such tests often wondered about the relationship of the test to the job, and employers have had difficulty using the results to evaluate employees or to develop human resource plans.

State-of-the-art job-related testing begins not with potential hires and trainees, but with the content of jobs and the high performers within those jobs. The development effort seeks to identify test items which are positively correlated with job performance. Those elements of a test battery which are determined to have "predictive validity" (e.g., shown statistically to be related to good work on-the-job) can then be used to assess individuals and design training programs.

When selecting a testing program, employers should also look for "face validity", that is, an obvious or intuitive connection between test items and job tasks. The job-relatedness of testing instruments should be obvious within each of the two basic kinds of tests--personality and skill. By ensuring that workplace tests have both face and predictive validity, employers can be confident that test results will be accurate and relevant to their needs.

In the area of personality, for example, the job-related tests should not be designed to establish a full personality profile, complete with the identification of traits which may have no concrete relevance to the job. Rather, the emphasis should be narrow and focused on matching individual personality traits (e.g., empathy, assertiveness, decisiveness) to jobs, as validated by comparing test scores and performance measures of workers who are in those very jobs. Additionally, personality tests can be more applicable when tailored around clusters of jobs, such as sales, customer service, or management. Such tests should also not make irrelevant references to race, religion, sexual preferences, etc.

Similarly, job-related skill tests should attempt to replicate the tasks of workers. For example, a clerical worker can be given a clerical skills test as an alternative to a generic math test, with the items of the clerical test mirroring the kinds of tasks required for the job. Such a test might include a series of questions which requires processing information on a mock computer screen. Tailoring tests to jobs will increase the validity of the instruments and likely enhance workers' motivation to complete them, since doing well on the tests is more obviously tied to doing well on the job.

Personality Tests

Job-related personality tests should seek to measure those aspects of a worker's nature or style that affect performance in particular jobs. The job-relatedness of the tests are critical, in that different personality types are required not only across occupations, but also across company cultures and within the particular setting of each job. For example, some management positions require fitting into the existing company culture, while others need leaders who are happiest when applying new ideas and changing the environment of the work group. Some sales jobs require persuasiveness, others require creativity and flexibility. The bank manager may need to be very achievement-oriented, while an achievement-oriented bank teller will feel stifled by the lack of promotional opportunities inherent in his or her position. In sum, different jobs require different personalities.

In some cases, personality traits which are associated with high job performance can be counter-intuitive. For example, in one set of sales positions it could be that good sales people do not have an affiliative need to be with other people -- in fact, spending lots of time associating with unprofitable clients may well not be productive. Thus, the key to effective personality testing is validation -- identifying which test items are best correlated with high job performance. Quite often, job-related personality tests are developed around certain categories of jobs, such as management or sales positions. Personality tests may be best suited to those jobs that require qualitatively oriented skills and where contact with customers or clients is emphasized, or in key managerial positions.

The personality test batteries developed by the most innovative testing firms have evolved away from academic type instruments which are difficult to associate with jobs. For example, Saville and Holdsworth's Occupational Personality Questionnaires attempt to profile up to thirty personality dimensions in three job-related categories: 1) interpersonal relations (e.g. assertive, gregarious, empathetic); 2) thinking style (e.g. practical, artistic, innovative, detail-conscious); and 3) feelings/emotions (e.g. relaxed, tough-minded, competitive, decisive). The assessment results are then used in selection,

training diagnostics, management development, and career counseling.

Related to personality tests are interest inventories, which are most commonly used as a tool in career guidance and counseling. Unlike the personality test, the interest inventory directly asks employees to rate the desirability of various families of occupations and areas of interest. Inventories are often tailored to workers at various stages in their careers, such as high school graduates, college graduates, or entry- and mid-level managers. For employers, the test can be thought of as measuring a third dimension of their workers -- not "can do" or "will do," but want to do. Interest inventories are rarely used as a candidate selection device.

Ability Tests

The most common tests given to workers measure skills, and are variously called aptitude, ability, or skill tests. Traditional forms of these tests were developed in academic settings, and include such well known instruments as the Minnesota Mechanical Ability Tests and the Bennett Differential Aptitude Test (which includes a test of abstract reasoning). Literally hundreds of abilities tests are commercially available, and catalogued (along with personality tests) within the series of Mental Measurements Yearbooks, edited by Oscar Burros. The most common types of skill tests are verbal, numerical, clerical, spatial, diagrammatic, mechanical, and tests of dexterity.

The trend in workplace skill or ability tests is toward developing instruments that are derived from tasks that workers face on-the-job. Instead of a generic math or reading assessment, workers increasingly are given tests centered on categories of occupations, such as clerical, technical, production, sales, and management jobs. These tests will of course assess reading and math ability, but do so within the context of job tasks. Clerical tests, for example, measure verbal usage, numerical computation, checking, classification, verbal meaning, numerical reasoning, and audio checking. Tests can also be designed around job families with particular applications, such as an automated office battery.

There are a number of potential advantages of such "content-based tests" (meaning tests which are structured around job tasks, or measures of performance). First and foremost, they have "face validity," in that most of those who administer and take the tests can see the connection between the instruments and job performance. Especially if test takers are wary of classroom-type, school-based assessment, the job-related look of the testing instrument may reduce anxiety and alienation surrounding the entire area of testing and assessment. Also, content-based tests may have greater predictive validity -- imitating job tasks within the tests can increase the correlation between test performance and job performance. Correlations can also be affected by restrictions in the range of responses, in sample size, and in supervisor ratings.

Implementing Testing in the Workplace

The basic steps in establishing a workplace testing program are as follows. The first task is job analysis--assessing the required competencies for the work that needs to be done in the company. Step two is developing a valid test battery -- one that is a good predictor of future performance in jobs. Step three is administering the tests,

and deciding what will be done with the results. Underlying each of these steps are considerations of cost, legal exposure, and the use of outside consultants.

Job Analysis

Job analysis identifies the key tasks associated with a job or set of jobs. This process is recommended within federal guidelines on employee selection, because a clear understanding of job tasks is likely to make assessment systems more job-related. By breaking available jobs down into their component parts (the task of job analysis) it is possible to test for gaps between workers and jobs. This aids in both screening and in designing training programs to fill those gaps. Formal job analysis systems include the Position Analysis Questionnaire (PAQ) developed at Purdue University and the Department of Labor's Job Analysis Schedule (JAS). The JAS, for example, collects data on the functions, setting, equipment, content, and worker traits required for a variety of occupations. Job analysis systems vary widely in their availability, quality, and cost.

Job analysis often begins with managers and workers completing objective questionnaires about the jobs which they supervise and do. Off-the-shelf job analysis surveys covering broad occupational categories can usually be filled out in less than one hour. The accuracy of job analysis is enhanced by having outside consultants or in-house subject matter experts (such as human resource professionals) observe workers in their jobs, and complete questionnaires or conduct interviews. Some testing specialists offer structured computerized analyses for only a few hundred dollars and the cost of participants' time in completing the questionnaires.

As with most things, the quality and accuracy of job analysis can be a function of cost, but even smaller companies will find that a little formal job analysis is better than none. The highest quality systems will be standardized, strive for multiple types of inputs (surveys, interviews), and collect data from a variety of job incumbents, supervisors, and subject-matter experts. The point of the exercise is to make explicit the "what" and "how" of the company's jobs, so that these can be compared to the incumbent employees (and potential workers) who are available to fill the positions.

Following a job analysis, the next step is to link job tasks to individual skill and personality attributes. Some testing companies have developed expert systems which match a set of job tasks isolated through job analysis to the likely needed individual attributes for those tasks, as previously identified by industrial psychologists. These attributes then form the basis for selecting a test battery for job candidates.

Realistically Assessing the Risks of Testing

From the employer's perspective, the leading factor reducing the desire to test is the legal risk. Many employers, especially smaller ones, are unaware of recent developments in research, court cases, and test development that have reduced this risk. But legal exposure is still an issue whenever testing is seen as a potential screen, whether for hire, promotion, or access to a training program that will lead to promotion.

The key legislation with regard to testing is Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Act of 1972. Title VII makes it illegal for employers to discriminate in hiring, firing, promoting, compensating, or in the terms, conditions, or privileges of employment on the basis of race, color, sex, religion, or national origin. Coverage includes most firms with fifteen or more employees for each working day in each of twenty calendar weeks in the current or preceding calendar years. Subsequent federal legislation prohibits discrimination by age and against pregnant women.[2] Several states and localities have extended protection to employees in smaller businesses, and two states have barred discrimination based on sexual preference. Further requirements are placed upon federal contractors.[3]

In 1978, the various federal agencies charged with enforcing antidiscrimination law published a set of Uniform Guidelines on Employee Selection Procedures, which do not carry the weight of law, but have been given much deference by the courts. The Uniform Guidelines articulate the elements of a valid testing program. When the guidelines are followed closely, then the use of validated, job-related selection procedures is virtually unassailable.

A rule of thumb in employee selection is the so-called four-fifths rule: there is "adverse impact" on a protected group if its members are not hired at the rate of at least 80 percent of the rate of the best achieving group. If there is no adverse impact, then there is less legal pressure on the company to validate that its selection procedures are job-related. However, there are sound business reasons for making sure selection is job-related no matter the demographic profile of applicants and employees, because irrelevant screening criteria will lead to a less productive set of hires.

When there is adverse impact, the Uniform Guidelines strongly suggest that companies conduct a job analysis, and then validate their selection procedures. The use of validated, job-related hiring practices is fully protected under the law, even if adverse impact occurs. For sound ethical and moral reasons, however, many companies seek to diversify their workforces in the presence of adverse impact, by broadening recruitment practices and introducing other innovative affirmative action techniques.

Some employers have the misperception that the federal guidelines encourage hiring certain groups of workers. In fact, the goal of the legislation and guidelines is simply to base selection criteria on job-related factors rather than race, sex, etc.. Senator Hubert Humphrey, arguing for the passage of Title VII legislation in 1964, said that it "does not limit the employer's freedom to hire, fire, promote, or demote for any reasons -- or no reasons -- so long as his action is not based on race." In Watson vs. Fort Worth Bank and Trust (1988), the Supreme Court reaffirmed this nondiscriminatory approach to Title VII by ruling that interviewing and other selection devices should not be treated differently from objective tests within discrimination cases. This action reduces the bias that had developed within case law that held objective screening criteria (such as testing) to higher standards than more subjective methods.[4]

The legal climate with respect to hiring and promotion practices is currently in flux. In response to a number of 1989 Supreme Court rulings, a bipartisan group of U.S. congressmen has introduced legislation known as the Civil Rights Act of 1990. The Act would codify that employers have the burden of proving that adverse impact is the result of nondiscriminatory hiring practices, and is thus justified as a business necessity.

The Justice Department is crafting a narrower bill, since President Bush has threatened to veto the proposed Civil Rights Act of 1990 in its current form.

Research has shown that, on average, minority candidates may score lower on valid and reliable ability tests than white applicants. Thus, using these tests may lead to adverse impact in selection. However, various studies have shown that a number of tests are indeed job-related, and do not treat minorities unfairly. Therefore, it is not illegal to test, as long as the test is clearly validated and related to job performance. Summarizing this research, testing expert Frank L. Schmidt of the University of Iowa states that:

> Cumulative research findings have disconfirmed ... theories that postulated that average score differences between groups were due to deficiencies in the [ability] tests ... At the same time, research has shown that such tests are valid for virtually all jobs and that failure to employ them in selection can lead to substantial economic losses. These findings have increased the percentage of jobs for which such tests will probably be used.[5]

Developing a Valid Test Battery

The Uniform Guidelines specify several methods for validating a testing program, but by far the most common is criterion-related validity.[6] "Criterion-related" means that the test is correlated with a measure (or criterion) of job performance. By far, the most common criterion used is supervisor evaluations. When the validation is done by conducting the test and collecting the criterion scores at the same time it is called concurrent validity. When the testing is done first and the criterion-related job performance assessed later it is called predictive validity.

Although the jargon surrounding testing is cumbersome, the process is fairly straightforward. Imagine setting up a testing program for a bank teller position. The first step in the process is job analysis -- figuring out the content and context of the teller position. The second step is selecting an appropriate test battery. At this stage, a number of tests and selection procedures are chosen, in order to see which dimensions are correlated with job performance. The advantage of concurrent validity is that the test can be validated rapidly. In this case, concurrent validity would mean administering the test to a sample of incumbent tellers, and then comparing test results to some measure(s) of job performance, such as the tellers' error rates or supervisor assessments. Test scales which are good predictors of job performance become part of the battery, and those that are not good predictors are discarded.

While concurrent validity has the advantage of providing a rapid turnaround, it has its disadvantages. Incumbent personnel may not take the tests as seriously as a group of potential hires, especially if they are told there will be no direct consequences from the assessment. Also, companies tend to sort out their good from their bad performers over time, and keep the good ones, so that the incumbents' performance scores may not show enough of a range to distinguish between the good and the not-so-good workers. Clearly, a criterion-related validation is only valid to the extent that the performance criterion (supervisor evaluation, error rate) is an accurate measure of on-the-job productivity.

An example of predictive validity would be administering the tests to a group of teller applicants, without using the scores to make hiring decisions. Once criterion measures

are collected on the job (such as the six-month supervisor evaluation), the tests would be scored and compared to performance. The advantage here is that the test would be validated on the same group for which it is designed (applicants). The disadvantage is the time that it takes to validate the test battery before it can be put in place.

The Uniform Guidelines do not require that all tests be revalidated in all workplaces, but it is prudent to conduct a validation study if technically feasible. Under the guidelines, a company may use tests which are validated elsewhere when (1) the test's validity has been clearly demonstrated in other settings; (2) the validity of the test was established on workers performing tasks similar to those within the company, as determined by job analysis in both settings; and (3) the test has been determined not to have adverse impact elsewhere for the local minority groups. If there is adverse impact, then it is advisable to do a validity study in the new setting, unless it is not technically feasible to do so.

In sum, for reasons of efficiency and protection from legal risk, it makes sense to validate testing instruments in the workplace. Unless a company has substantial in-house expertise in this area, the field is complex enough to warrant the use of outside consultants. The cost of a validation study varies widely, depending on how elaborate the test battery and how large the company. A 1975 Prentice-Hall/American Society for Personnel Administration survey reported costs of under $5,000 in most cases.[7] Despite inflation, dollar costs have been reduced since then by computerization and standardization of validation procedures. One testing specialist at Saville and Holdsworth Inc., a Boston-based firm, reports that without validation, the up-front cost of job analysis and buying some materials can be less than $1,000; however, larger companies often spend over $100,000 designing and validating a testing program. A validated testing battery can be developed for as little as $6,000.

For smaller companies, an effective approach to test development and validation is working through a local employer group. In collaboration with a testing specialist, consortiums of businesses in a single industry or related industries can pool resources in job analysis and validation. Group efforts also help to establish norms which make sense for the local population of workers, avoiding reliance upon national standards which may not fit the region's workforce.

Conducting the Tests and Interpreting the Results

Currently, an employer can initiate a testing program at an operating cost of approximately $5-20 per subject tested. Off-the-shelf job-related tests of both personality and skill have lowered the costs and increased the validity of the instruments, and are available for use by human resource professionals. Reputable testing companies follow American Psychological Association guidelines as to the minimum training required to administer psychological tests. Testing specialists often provide training courses which certify in-house personnel to use their materials. Developing testing competencies in-house can significantly lower assessment costs in the long-run.

By rigidly applying tests to screen out low performers, companies will inevitably end up rejecting some potentially high performers. On the other hand, a well-thought-out test battery can aid in the selection of trainable entry-level staff with

interests that match job content. When so viewed, many companies are using testing flexibly, to both define minimum competencies and design training strategies. In essence, testing is not and end unto itself, but is rather a management tool to aid in assessing workers and mapping out available human resources.

Appendix Endnotes

[1]Val Arnold, vice-president of individual assessment at Personnel Decisions Inc., as quoted in Training, December, 1988, p. 50.

[2]These are the Age Discrimination in Employment Act of 1967, as amended in 1986, and the Pregnancy Discrimination Act of 1978.

[3]These include the Rehabilitation Act of 1973, the Vietnam Veterans Readjustment Assistance Act of 1974, and Executive Orders 11246 and 11375. Federal contractors with contracts above a minimum cutoff point are required to develop affirmative action programs.

[4]See Clint Bolick, "Legal and Policy Aspects of Testing" (Journal of Vocational Behavior 33, 1988), pp. 320-330.

[5]Frank L. Schmidt, "The Problem of Group Differences in Ability Test Scores in Employment Selection" (Journal of Vocational Behavior 33, 1988), pp. 272-292.

[6]The other methods are content validity and construct validity. Content validity refers to testing individuals as they perform the actual tasks of a job; the classic example is a typing test for clerical personnel. Construct validity is determining the extent to which a test measures some theoretical trait such as intelligence or verbal ability, as an end unto itself. The employer is on safer ground if these constructs are objectively validated as connected to job performance -- that is, included as part of a criterion-related test.

[7]Wilfredo R. Manese, Fair and Effective Employment Testing; (New York: Quorum Books), 1986, p. 26.

CHAPTER 3

ESTABLISHING WORKPLACE BASIC SKILLS TRAINING PROGRAMS

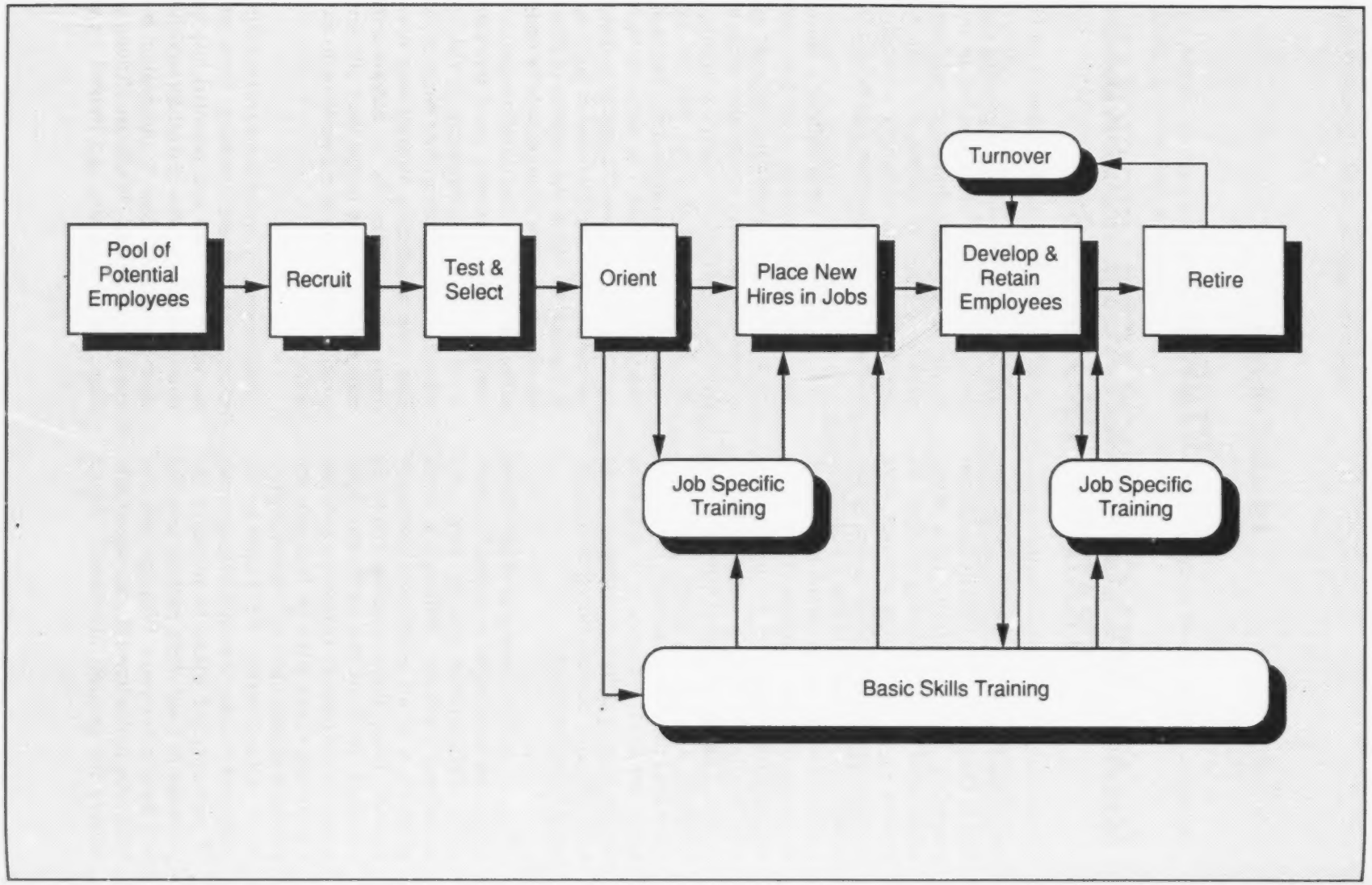
When the Tektronix company, a high-tech firm in Oregon, tried to shift its traditional assembly line workforce to a more automated manufacturing system, 20 percent of its production workers were found lacking the basic skills needed for the transition.[1] In response to this, the company contracted with a nearby community college to operate an on-site program in basic math and English instruction for many of its non-English speaking assemblers. In Ontario, Canada, Sherborne Manufacturing Limited, a machine parts producer, discovered that it was necessary to invest in adult remedial education to improve worker literacy skills before changes in its assembly and manufacturing technology could be implemented.[2]

These are just two examples of how many companies have begun to respond to basic skills deficiencies among new and incumbent workers. Although a small proportion of all employers currently provide basic skills training (18 to 26 percent), most of the evidence--both anecdotal and research-based--suggests that a growing share plan to increase the provision of such training.[3] According to a recent national survey of 613 firms by the Society for Human Resources Management, 77 percent had plans to increase the provision of basic skills training over the next three to five years. Writing, math, and basic communications skills are expected to receive the greatest attention.[4] In an environment where there is a growing gap between the basic skills needed in the workplace and the abilities of workers, workplace-based education and training has become an increasingly necessary human resources investment (see Exhibit 1).

The need for basic skills training is made clear by the large numbers of workers who are not hired or promoted because of deficiencies in one or a combination of basic skills areas. In the U.S. today, it is reported that 84 percent of all firms that test job applicants for basic skills deny hiring if deficiencies are found.[5] A similarly high percentage of firms (72 percent) deny promotion if workers are tested as deficient in basic skills. While the majority of firms do not currently test job applicants for basic skills, the large share that do (40 percent) are turning away otherwise good workers whose productive capacity could be enhanced by upgrading their basic skills. This type of selection strategy may have been appropriate in a baby-boom environment, but it is not very efficient when qualified workers cannot be found easily.

Understandably, many firms are reluctant to engage in basic skills training. Some are fearful of the costs and potential loss of newly trained workers, and others lack the expertise and/or access to information on available resources. While establishing a basic skills program can indeed be a

Exhibit 1
The Role of Workplace Basic Skills Training



challenging task, it is also a feasible one. Several firms, both large and small, have demonstrated the viability of establishing effective workplace basic skills programs. The experience of one small Vermont manufacturer, as described below, illustrates the point. Additionally, public employment and training programs, local adult literacy centers, and area colleges are available to assist with various aspects of designing and implementing basic skills programs. In some cases, these (public) institutions can also share the costs of designing and operating the program. For many employers, the key challenge today is not so much whether or not to offer basic skills training, but how to best design and operate a program that responds to the needs of workers and the firm within existing budgetary and other guidelines.

This chapter reviews some of the major issues involved with the design and implementation of basic skills programs for new and incumbent workers. The chapter is organized around the following four issues:

1. The Basics of Basic Skills Programs
2. Identifying Basic Skills Problems in the Workplace
3. Designing a Basic Skills Program
4. Implementing a Basic Skills Program

Upgrading Job-Related Basic Skills at Superior Technical Ceramics

Since 1984, Superior Technical Ceramics (STC) has been operating a job-related basic skills training program taught by staff engineers and delivered on an in-house basis. The first classes offered were basic math and blueprint reading. Subsequent courses have been developed in job-related specialties such as kiln procedures and threading.

STC is a small manufacturer located in rural Vermont that produces machined ceramics for specialty business uses. The company has a workforce of less than 100, most of whom are unskilled and semi-skilled production workers. The only entry-level skills required are the ability to attend to detail, some manual dexterity, and a willingness to work in a manufacturing environment. Machine set-up and shop supervisory jobs, however, necessitate a set of competencies that few of the entry-level workers have. These include reading and interpreting blueprints, making shrinkage calculations, and calibrating machines to the exact requirements of small-scale production runs. The higher level set-up and shop supervisory jobs at STC are staffed almost completely through internal promotion. Because of the sequential nature of ceramic manufacturing, mistakes can be quite costly as pieces move through the various production stages.

Initially, the company's job-related math and blueprint training was offered to all interested workers, half on company time and half on the worker's own time. However, management came to believe that such broad-based training was not an efficient use of scarce small business resources. Slow learners held back those with more ability and academic background, and not all those who took the classes could realistically move into positions that required more sophisticated analytical skills. To improve the benefits of their training

programs, STC's courses are now targeted on the most motivated and able production workers who show promise for advancement.

By encouraging a select group of workers to enter into job-related courses, STC sends a signal that training is the first step toward promotion. It is not necessary that workers do extremely well in the courses to advance. While training has become central to upgrading the basic skills necessary for promotion, it also identifies workers who have the drive and determination to complete something that is challenging for them--no matter how well they actually do in the class. This is a key indicator that STC uses to assess the longer-term potential of its workers.

Two important issues in the development of basic skills upgrading at STC were efficiency and cost minimization. To address these, STC's courses are organized in such a way that there are no explicit expenditures. Staff engineers develop the courses based on their experiences on the shop floor, and teaching is treated as a job assignment covered by their base salaries. In addition, workers enrolled in training come off of the line 15 minutes early to attend classes in the company lunchroom. Classes last from 30 to 45 minutes, but workers receive only their regular paychecks. So the major cost is 15 minutes of lost production time, and the time spent by the engineers in designing and teaching the courses.

The critical math and blueprint reading courses run for up to 22 weeks, depending on the abilities of those enrolled. Classes tend to have no more than 10 to 12 workers, and meet once per week. Sessions are held in the fall and in the spring. Neither workers nor engineers are interested in taking or teaching courses during the short Vermont summer.

STC's President is convinced that without the basic math and blueprint training, it would be very difficult to fill higher-level shop positions from within. Without training, shop workers would need much more supervision from engineers, and this of course is expensive. The company has shown that it is possible to upgrade workers' skills in job-related ways with limited explicit costs, and with effective results.

The Basics of Basic Skills

At the outset of designing basic skills programs, it is important to establish a conceptual framework that defines basic skills and the approach that will be taken to engaging adult workers in a structured learning experience. While the specifics of program planning and implementation are important, addressing these early design issues can make an important contribution to setting a clear course of action that responds to specific worker and company goals. There are four such design issues that warrant careful attention, including:

1. Defining basic skills;
2. Classifying basic skills problems;
3. Establishing functional links; and
4. Planning for the adult learner.

Defining Basic Skills

There are several key considerations in establishing a workplace basic skills program. First and foremost is defining basic skills. Those interested in implementing workplace basic skills programs must begin with a working definition that reflects workplace needs, permits measurement of worker competencies, and allows for the meaningful classification of problems that may be found to exist. This is an absolute essential for ensuring that basic skills programs have specific objectives and provide training in areas that reflect workplace needs and deficiencies among employees.

Traditionally, basic skills have been defined in academic terms to include reading, writing, and math. Most publicly sponsored literacy programs, adult education courses, and even employer-provided training initiatives have focused on providing remediation in one or a combination of these areas. Recently, however, the term has taken on a broader definition to include the 3-Rs as well as a spectrum of more qualitative skills needed to perform effectively on the job.

The broadest definition of basic skills to emerge recently was developed by the American Society for Training and Development (ASTD).[6] According to ASTD, employers want well-rounded workers who have acquired a range of critical skills and who also have the capability to adapt to change and acquire new and more sophisticated skills when necessary. On the basis of case studies and discussions with a large number of American firms, ASTD developed a definition of basic skills that includes 17 discrete competencies organized into seven major areas. These include:

1. Ability to Learn
2. Reading, Writing, and Computation
3. Communication: Listening and Oral Communication
4. Adaptability: Creative Thinking and Problem Solving
5. Personal Management: Self-Esteem, Goal Setting, Motivation, and Personal/Career Development
6. Group Effectiveness: Interpersonal Skills, Negotiation, and Teamwork
7. Influence: Organizational Effectiveness and Leadership

At a time when new forms of production, service delivery, and management are demanding new and higher levels of skills, this range of competencies will be valued highly by employers and employees alike. In manufacturing, for example, the emergence of multi-skilled teams to plan and oversee product design and production has highlighted the need for a wide range of new attitudes and skills among employees. As workers in this collaborative environment take on added responsibility for problem solving and decision making, they must certainly be competent in such basic skills such as reading, writing, and math. However, collaborative work environments also require basic skills in group problem solving, conflict management, leadership, and communication. To be competitive in today's global economy, employers need workers who have a wide-range of basic skills so they can perform productively in a

changing environment and assume a variety of responsibilities.

While this broad definition may define the structure of ideal worker competencies, the need for them varies. Not all firms will place equal value on each of these skills, and neither will they be able to afford the training needed to impart all basic skills in workers. Basic skills requirements may also differ by major job category and by organizational area (e.g., assembly operations, customer service, etc.). From a practical viewpoint, the definition of basic skills needs to be based on the most critical requirements of each individual firm.

Recently, the majority of employer attention has been on the academic elements of basic skills. This is partly because a large share of employers already provide training that addresses several of the other elements of basic skills.[7] At the same time, the focus on academics also reflects an unexpected large share of new and incumbent workers functioning at literacy levels below what is required to do a good job and participate in additional training successfully. Faced with competing priorities, most employers usually begin by defining basic skills in terms of a functionally literate workforce able to perform productively and learn new skills.

Classifying Basic Skills Problems

The process of defining basic skills suggests a related consideration--deciding how to classify workplace needs and employee deficiencies. For a given set of basic skills, there is likely to be a high degree of diversity in actual levels of employee competencies. In addition, the absence of some skills may pose different workplace problems than limitations in other skill areas. By developing an approach to classifying the types of basic skills deficiencies found in workers, program benefits can be more readily identified, and effective programs can be more assuredly designed.

For example, the Communications Workers of America and AT&T recently implemented a series of brief Test Preparation Programs designed to help workers pass company tests that serve as prerequisites for entry into certain occupational groups and advanced training programs. In this case, the problem was focused on a large number of employees whose moderate levels of basic skills were not sufficient to pass these tests. This stands in sharp contrast to a situation where the employees may have had extremely low levels of literacy. By identifying the problem in terms of mobility blockages among workers with moderate levels of basic skills, the company and the union were able to design a program with clear goals and expected benefits.

There are several ways that basic skills problems (or deficiencies) can be classified. One useful way is to group them in terms of "multi-strands", with each strand corresponding to a slightly different type of solution.[8] For any given set of basic skills, problem areas or deficiencies can be grouped into primary categories that serve as the foundation for developing a program response. In the case of literacy related basic skills, these categories could include the following:

1. Extremely low level literate workers who cannot function independently with even simple print. New or incumbent workers at this low level will require extensive educational remediation to help them function in basic entry-level jobs.

2. New and experienced workers who exhibit moderate levels of basic skills, but cannot benefit from advanced training, assume new responsibilities readily, or adapt to the increasing demand for higher level problem-solving and group decision-making skills. This type of problem can often go unnoticed, but can affect a large proportion of workers.

3. Employees at nearly all ability levels who make job related basic skills mistakes that influence safety, productivity, and promotability.

Creating a framework for defining and grouping basic skills problems sets the stage for the next critical design issue—establishing functional links between basic skills and job requirements.

Establishing Functional Links

To be meaningful to both workers and management, the definition of basic skills must bear some specific relation to the tasks and issues confronted on the job. Very early in the program design phase, attention has to be given to drawing specific links between the basic skills identified as important and how they are actually reflected in specific job categories. Adopting this functional approach to basic skills training ensures that programs are focused on practical job related tasks, and that curricula are based on materials that replicate work situations and teach basic skills in the context of workers' jobs.

The primary value of taking a functionally-based approach is that it grounds the program in employees' functional areas of expertise and uses instructional materials drawn from regular job-related activities. In contrast to the generic approach used in secondary education, a functionally-based approach would base its curriculum on the employee's work tasks. For example, to teach basic arithmetic, a functional curriculum would center instruction on production coding forms the worker uses on the job, or the use of a blueprint operating manual.

There are a number of specific factors that make functionally-based training more appropriate for workplace learning. First, by drawing on the (adult) learner's current knowledge, functionally-based teaching tends to reduce anxiety adults frequently have concerning training and education. It can also build trainee self-confidence by highlighting what trainees know rather than the competencies they lack.

Functional training is also easily distinguished from the type of traditional classroom training many adult workers experienced as youths, thereby limiting any negative associations that may exist with prior educational experiences. Finally, because functional basic skills training emphasizes the application of skills in everyday worklife, employees are more likely to practice and apply what they have learned in training, and less likely to drop out of training due to dissatisfaction with their progress or the program's relevance.

Ultimately, taking a functional approach promotes the transfer, application, and retention of basic skills. It also ensures that the definition and teaching of required basic skills are relevant to the organization and the employee's ability to do his or her job. In designing a basic skills program, employers would do well to begin by identifying those basic skills that are critical to the organization and then expressing them in functional terms that relate specifically to the jobs, competencies, and tasks under consideration.

Planning For the Adult Learner

In designing a basic skills program, it is important to remember that the student is an adult who in many cases has been out of school for a number of years. The experience of most firms that have provided workplace basic skills training indicates that adult workers cannot be expected to perform well in instructional settings on or off the job that are designed for the traditional youthful student. As a result, special attention has to be given during the early design phase to ensure that training and education programs are structured to reflect the learning behaviors and preferences of adult workers.

There has been a great deal of research aimed at identifying learning differences between adults and youth, including their implications for basic skills training. Five commonly accepted differences that have an important bearing on the design of basic skills programs include:

1. Adults are more afraid of being embarrassed if they do not know something, and are therefore more reluctant to try new things.

2. Adults often have extensive knowledge and experience to contribute to their understanding of the topic and become frustrated when training is structured in abstract, generic terms.

3. Adults want to know in advance what is going to happen in training, what will be expected of them, and how they will benefit from participation.

4. Adults are usually more interested in subjects that have practical applications in their lives and/or jobs than they are in theoretical or abstract concepts.

5. The educational backgrounds and competency levels of adult workers shows great diversity and requires a flexible approach to curriculum development.

These differences can be applied in a number of different ways to design basic skills programs for adult workers. However, together they suggest that education and training for adult workers will be most successful when the training is:

- Functionally based.
- Participatory in nature and based on methods that necessitate the active participation of workers.
- Adjusted to the trainee's skills level and modular to accommodate differences in skill and competency levels.
- Structured to ensure that trainees receive constructive feedback on their performance while learning new tasks.
- Designed to model the thought process, thus facilitating trainee introspection and the enhancement of learning skills.
- Integrated with the worker's primary life activities to facilitate practice, assimilation, and eventual integration of newly acquired skills and knowledge.
- Conducted in a way that protects confidentiality, and fosters trust and rapport by showing respect for the adult learner.

Identifying and Documenting Basic Skills Problems

In the workplace, employees utilize a variety of skills to accomplish specific tasks, develop solutions to problems, and make judgments about different situations. Reading, writing, and communication, for example, are relied upon routinely to perform one's job, whether it be in an individual or group setting. While employees' basic skills may be adequate for acceptable performance, basic skills deficiencies are often well hidden until a change in the work or external environment takes place.

As the symptoms of basic skills problems appear, employers should attempt to identify and document the problem in as much detail as possible. This type of early documentation should include the type of workplace problem that has emerged and its relation to basic skills, the areas of the organization and the occupations that seem to be most affected, and the specific groups of workers which appear to have the greatest problems. On the basis of this information, companies and workers can establish the foundation for a targeted and responsive basic skills program.

There are several types of indicators or events that employers should routinely assess to determine whether a basic skills problem exists. Although not definitive, these indicators represent the starting point for flagging potential problems and developing solutions to them. At least three major indicators or situations have proven useful in spotting basic skills problems.

Employee and Customer Feedback Can Reveal Skill Deficiencies Among Workers.

A supervisor's report may relay that implementation of new technology is taking longer than anticipated, customers may complain that cashiers are unable to calculate change without using a cash register, or employees may complain that they need training to perform up to manager expectations. To take advantage of these cues, a company personnel manager or supervisor should be on the lookout for such problems, and be ready to investigate them to see if basic skill deficiencies are the cause.

Changes In Technology and the Organization Of Work Can Create Workplace Basic Skill Problems.

This is particularly true for companies with a long tenured, older workforce that was hired to perform low and semi-skill jobs. Such workers are likely to face difficulty if changes in the workplace suddenly call for new technology training or a team orientation to decision making. A change in circumstances is a force that can often bring skill deficiencies to light. Companies anticipating change should be alert to possible basic skill problems.

Persistent Shortages In Filling Vacancies, and High Turnover Can Indicate a Need For Workplace Basic Skill Training.

Company efforts to hire new workers with strong basic skills may yield few qualified persons as skilled entry level workers grow scarcer. Similarly, incumbent workers may lack the basic skills needed for advancement and may seek alternative opportunities. In each case, the workplace could benefit from

a basic skill training program. Greater numbers of lower skilled individuals could be hired, and workers that might have quit or been fired because of poor basic skills could be trained by the company so they can perform on the job.

These types of indicators and situations can provide important information about potential basic skills problems. They provide clues that need to be followed-up to determine whether a more extensive examination and development effort is warranted. Employers can benefit substantially by routinely checking for these and other similar indicators and attempting to document their relation to basic skills deficiencies.

Key Design Issues In Basic Skills Training Programs

Once an employer determines that it may be necessary to implement a workplace basic skills program, several specific issues must be addressed. These issues can be viewed as design steps, and include:

- Assessment of workplace basic skills needs;
- Establishing conditions in the workplace that encourage enrollment in training;
- Design of a training curriculum; and
- Obtaining management approval, and financial commitment to the training program.

Assessing Basic Skills Needs

Conducting an assessment of basic skills needs is an essential step in the design of a workplace training program. It provides the information necessary to determine the specific nature of basic skills problems, how prevalent they are throughout the workplace, and the extent to which they are concentrated among different employee groups, job categories, and areas of the organization. An investigation into the size and nature of basic skills problems is critical to determining an appropriate program response.

The cornerstone of the assessment process is a comparison of the basic skills required for a set of jobs and the abilities of workers. By identifying the gaps that exist between worker competencies and skill requirements, employers can plan a program that responds effectively to both employee and company needs.

On the basis of the information obtained from the initial documentation of basic skills problems, employers should begin the assessment process by determining the types of specific skills needed to perform productively on the job. Once these basic skills requirements are identified, it will be important to establish minimum competency levels that can serve as the basis for determining the extent to which basic skills deficiencies exist among workers.

Determining actual worker skills and competencies is the next step in the assessment process. To be useful, information on skill requirements must be examined in the context of actual worker abilities. Ideally, the range of worker skill levels would be categorized in relation to minimum acceptable levels of competency so that judgments can be made regarding the severity of the problem and the training investment that will likely be required.

Regardless of the assessment method used, the process of assessing basic skills needs should be organized to answer four major questions, including:

1. To what extent are employees functioning at acceptable levels of basic skills, and what number and percent might be targeted for training?

2. Which groups of employees and job categories are most vulnerable to basic skills problems, and how are they distributed within and across different organizational and/or business units?

3. How much interest do employees exhibit in basic skills training, and what are the characteristics of those likely to participate in a program?

4. What is the likely size and specific focus of basic skills training programs that will be needed in the workplace?

There is a wide range of alternative ways to implement a basic skills assessment process. They vary from talking with employees and supervisors to testing employees on a customized task specific competency test. The choice of a needs assessment technique should be based on the size and complexity of the particular business, the perceived extensiveness and importance of the problem, and critical constraints imposed by both time and resource availability. Presented below are brief summaries of alternative techniques for conducting a needs assessment.

Talking to Employees and Supervisors

Much can be learned from talking to the individuals a training program would serve. Informal or structured conversations with employees and supervisors about basic skills requirements and deficiencies can yield information about the perceived need for training and likely employee response to such training. Interview guides can also be used to conduct structured individual interviews and focus groups composed of managers and/or employees. Each of these techniques can provide a good impression of workplace needs, although they will not yield quantitative measures of need.

Conducting Needs-Based Surveys

A more formal approach to needs assessment is to survey employees and/or supervisors regarding their perceptions of existing worker skills and job requirements. This method has been used widely in industry and can provide accurate and useful planning information, especially by surveying both supervisors and their subordinates. Adopting a survey approach casts a wide net that will facilitate a detailed and accurate determination of basic skills needs.

Testing Employees for Basic Skills

Formal tests of employee basic skills is another, more precise, alternative for conducting a needs assessment. While the test results will still have to be combined with information on basic skills requirements, the testing approach can provide the most accurate portrayal of worker abilities.

There are several general tests that employers can use to obtain reliable information about basic skills deficiencies in their workforce. Testing packages vary widely in cost and in terms of how specifically results are reported and the time required to complete them. Testing does, however, offer a proven method for gathering accurate information about worker competencies that can be used directly in planning basic skills programs.

Workplace basic skills testing requires careful planning. Employees may resist

taking such tests and they may experience substantial anxiety about the results. Moreover, to be useful, tests should be structured to assess functional work-related skills rather than general educational competencies. In planning a workplace testing program, careful attention should be given ensuring that the testing process accounts for workers' needs and potential fears, and that the test itself measures those skills and competencies critical to job performance.

Conducting a Basic Skills Audit

A basic skills audit is the most comprehensive and thorough approach to conducting a needs assessment. The basic steps needed to conduct the audit include the formal collection and analysis of information on skills requirements and worker competencies. Basic skills audits are usually targeted on specific groups of jobs and may involve a combination of employee surveys and testing, as well as formal job analysis. While the specific tools needed to perform the audit may vary, what distinguishes it from other techniques is its thorough, comprehensive, and detailed nature.

The disadvantage of a basic skills audit is that it can be relatively costly, time consuming, and complex.

Needs Assessment at Texas Instruments

When Human Resource staff at Texas Instruments (TI) needed to conduct an assessment of their training needs, and do so quickly, they began by establishing an assessment team with members drawn from each of the five functional areas of the Human Resource Department. Outside training and development specialists were then hired by TI to help direct the needs assessment.

With the aid of the outside specialists, the assessment team developed a five step training needs assessment model. Step One involved creating a list of tasks typically performed on the jobs analyzed. This list was then reviewed and modified by the assessment team after round-table discussions. Finally, the list was divided across five functional areas. In the second step, the assessment team developed and carried out a survey of TI's Human Resources staff. The survey asked respondents to rate the importance of each task on the list in relation to their jobs. Data from the surveys were then analyzed and a cumulative ranking of tasks was developed.

The third step in TI's needs assessment was to observe Department instructors as they conducted company training. Observation focused on instructional delivery, and monitors were guided by a short list of points to check off. Two measures were taken to alleviate anxiety among the personnel that were observed. Monitors met with each employee under observation to explain the purpose of the inquiry and to assure him or her of the confidentiality of any findings. Second, after the training session was complete, monitors met with the instructor to provide feedback.

The assessment team staff then conducted structured interviews with a sample of employees from each of the five functional areas in the Human Resource Development Department. The

purpose of the interview was to clarify the strengths and weaknesses of the product delivered by each area with the aim of highlighting areas where staff training would be helpful. Finally, the assessment team compared results from the different sources of information and prepared a final report on training needs of the Human Resource Development Department.

Source: This discussion is drawn from Wircenski, Sullivan, and Moore, "Assessing Training Needs at Texas Instruments", Training and Development Journal, April, 1989, p.61.

Establishing Conditions and a Process for Program Participation

Early in the design process, it will be important to determine how the participation process will work. This is a critical planning step since the benefits of proposed training investments depend on the participation of workers. Based on the experience of many firms, employers should not expect that all workers targeted for basic skills training will ultimately become participants. On average, employers should expect a (voluntary) participation rate of roughly 25 to 30 percent.

A worker's decision to participate in a basic skills program depends on a variety of factors related to personal goals and ambitions, the location and scheduling of training, the perceived relevance of the program, connections between program participation and salary as well as career growth, and whether the overall design addresses anxiety and fears that adult workers may have regarding continuing education. Those responsible for planning and implementing basic skills programs need to take these factors into consideration carefully when preparing the program's design.

While most employer-sponsored basic skills programs are voluntary, some firms are moving toward mandatory participation. Aiding this approach is federal legislation that allows up to 10 hours of remedial education to be offered without required overtime pay, as long as the worker has not graduated high school, is functioning below the eighth grade level, and the training does not include job-specific training (The Fair Labor Standards Amendment of 1989, Section 7).

Mandatory participation in training is not without potential problems, however. Workers may resist participation for personal reasons or because the location and training schedule is inconvenient. Mandatory participation also suggests an ability to identify those specific workers who will be expected to enroll in a program. Unless a company mandates participation for all workers in a given area or occupational group, it will have to rely upon a combination of testing and supervisor assessments. The latter screening mechanism may be viewed as especially suspect by prospective trainees.

Developing Basic Skills at Motorola

In the second half of the 1980s, Motorola developed an international reputation for quality and innovation, and has the Business Week cover stories and the Department of Commerce quality award to prove it. The electronics giant's innovative provision of basic skills upgrading for its workforce is a case in point.

Motorola is a highly decentralized company, although some policies cut across production sectors and lines of business. One of these policies is the "service club," which includes all workers who have given at least 10 years of service to the company. While the service club is not a guarantee of lifetime employment, it is close to such a guarantee. Members of the club can be let go only if their managers have done everything possible to keep them, and even then, a layoff requires the signature of the Chairman of the Board.

In counterpoint to the service club at Motorola is the increasing realization that there are basic skills deficiencies among incumbent workers which are affecting quality and efficiency. The company has responded to this in several ways. As a long-run solution to a higher level of minimum skills proficiency, a job-related corporate Basic Abilities Testing Battery (BATB) was developed, and is now given to all new applicants for production jobs. The test covers both reading and math, as well as visual acuity, forms completion, and simulated work situations. Since virtually all new hires are scoring at job-grade levels on the BATB, the basic skills challenge at Motorola relates primarily to the incumbent workforce.

The initial basic skills training efforts at Motorola were voluntary, and most were on one-half paid company time and one-half on the worker's own time. The courses have been developed mostly through contracts with the adult education departments of local community colleges. For both the company and the community colleges, in-plant basic skills training is relatively new, and there is still much to be learned about how to upgrade basic skills in the workplace effectively.

In some cases, Motorola and the local community college have created an educational liaison position that serves a number of plants in a single geographic area. This adult education professional is responsible for coordinating programs and developing job-related curricula. The liaison is employed by the college, but works in the plants side-by-side with Motorola staff. This allows the company to have an adult education expert on staff, without having to create a new career path within Motorola itself.

The challenge of skill upgrading is immense, and Motorola understands that the commitment to basic skills training is a long-term commitment. The BATB, which was developed based on real needs within Motorola production jobs, is designed to test for reading at the 7 to 9.5 grade level, and math which includes decimals, fractions, and percentiles. Since it takes approximately 100 hours of training in each subject to raise a worker one grade level, moving workers up to the level of the BATB can take a number of years.

As an incentive to participate in training, many plants provide access to higher-level jobs, pay grades, and advanced skills training only to those who have demonstrated needed skill

proficiency on the the BATB. This helps to focus the basic training around a common goal that workers understand. Workers are given a clear economic incentive to enroll in courses and take the test.

Over time, more and more Motorola plants that provided basic skills training on a voluntary 50 percent company time basis have moved toward mandatory training (for those who need to develop job-grade competencies) on 100 percent company time. Aiding this decision was new federal legislation which allows up to 10 hours of basic training to be offered without mandated overtime (as long as the worker has not graduated from high school or is functioning below the 8th grade level). Beginning with voluntary participation before moving to mandatory training has helped the company reach the more motivated (and possibly higher skilled) workers first. Mandatory training may require more resources and take longer to be successful, but the company believes that it is the only way to upgrade the basic skills of each and every Motorolan.

The Motorola basic skills program includes 40 distinct delivery systems across a multitude of plants. The company projects that by 1995 about $35 million will have been spent on basic literacy. But Motorola has not attempted to justify this expenditure through exacting cost/benefit analysis. Rather, top management views the need for basic skills upgrading as intuitive and obvious, as part of a much broader effort to be the highest quality manufacturer of electronics goods in the world.

When the decision is made to provide training on a voluntary basis, there are several steps that can be taken to encourage worker participation. These include the following.

Pay employees for time engaged in company training, or conduct training during working hours.

Payment for some or all of the time spent in training will reinforce the company's commitment to training, and lower the employee's costs of leisure time lost because of training. The major drawback of such encouragement is the high cost.

Provide informal support for trainees.

Personal support and encouragement from supervisors and management in the company is valuable in getting employees that need basic skills training to overcome fear and to participate. Communication to employees about the program can facilitate such support.

Clearly communicate the objectives and expectations regarding participation in training.

Reassure employees against fears concerning job security, and explain what will be expected of participants, particularly with respect to grading and attendance.

Schedule training so employees can begin training at any time, and can attend immediately before or after work hours.

The easier it is for employees to attend training, the more likely they are to attend. Waiting periods between the time an employee expresses an interest in training and training enrollment can cause many employees to lose interest. If training can be accommodated easily in an employee's personal schedule, workers will be far more likely to take part in training.

Hold training on company premises.

This encourages participation by making it easier for employees to attend and by emphasizing the importance the company assigns the training. In addition, because a workplace training site is likely to be quite different from a public school, employee reaction against a traditional classroom setting is likely to be mitigated.

Establish programs which ease the personal costs of attending training.

Facilitating car pooling and child care arrangements, as well as other similar actions reduce the chance that family commitments will force trainees to decline enrollment or to drop out of training.

Protect the confidentiality of training participants.

Adults with basic skill deficiencies frequently go to great lengths to hide their limitations, and fear that other people will learn about them and view them unfavorably. If employees believe that it is possible for co-workers to learn they are seeking remediation, they may refuse to take part in training. Assurances of confidentiality of training participants is one way to address such fears. Another important way stigma is avoided is by packaging the basic skill training program as part of an overall employee training and development program; and avoiding reference to the program as remedial or basic skills.

Link training to career advancement.

Creating clear and explicit links between participation in training and career advancement can provide employees with important incentives to participate in training. By connecting successful program participation with opportunities for promotion, employers can motivate workers and also help to fill existing and future vacancies.

Designing the Basic Skills Curriculum

The design of the basic skills curriculum is the point at which information on workers' abilities and job requirements are translated into a specific plan and set of materials that are used to engage workers in the learning process. Key elements of curriculum design include the development of an instructional approach, and the preparation of a program outline, individual lesson plans, and instructional materials.

While there are several alternative formats that can be used to design the basic skills curriculum, four key issues should be addressed. These basic curriculum design issues are as follows.

Base the Curriculum on a Functional-Competency Based Approach

An effective basic skills curriculum should be grounded in the specific tasks that employees are expected to perform on the job. To the extent feasible, training should replicate work situations and teach employees basic skills in the context of their jobs. This functional approach stands in contrast to the traditional academic curriculum used in the school system, where generic examples and abstractions are the basis for teaching new skills.

Within a functional approach, the program's curriculum should also be competency-based. Competency-based training is related to functional training in that instruction is aimed at increasing employees' ability to perform specific tasks. Unlike general basic skills training which might focus on objectives such as improving spelling, vocabulary, or reading comprehension, competency-based training focuses on skills-specific objectives, such as using an operations manual or reading blueprints. What distinguishes the competency approach from more basic functional training is its reliance on benchmarking worker skill levels and tracking performance over time.

A key step in creating a functionally-based curriculum is conducting a job and task analysis. For those job categories identified as experiencing basic skills problems, a task analysis will identify the specific competencies that are needed to perform productively. This information can then be used to develop course objectives and outlines, as well as a framework for instructional materials.

Match the Curriculum to the Worker's Skill Level

Once the functional basis of the curriculum is established, instructional plans and materials have to be developed. Because the skill level of workers will vary, the instructional plan must be flexible and set in a competency range appropriate for the trainees. While programs can be developed with fixed instructional plans, these tend to be more restrictive and prone to higher levels of attrition.

Modular instruction is a cost-effective way of tailoring training and educational materials to the unique needs of individual workers. A modular curriculum consists of several stand alone units on different topics or competency levels which can be combined to comprise an individualized instructional plan. The completion of a given module usually indicates the achievement of a specific competency and signals progression to the next one.

In addition to its appeal to a wide range of workers, a modular curriculum offers other benefits as well. One is that it facilitates the placement of individual workers at levels appropriate to their skills. A modular curriculum can also accommodate unexpected demands on a worker's time especially if training is offered after or before work hours. Because of its flexible structure, workers may be able to miss certain classes but still progress toward the achievement of specific competencies.

Open entry and exit is the most flexible way to use a modular curriculum. It allows workers to enter a program at any given time and to exit as easily. The key foundation of open entry and exit programs is individualized instructional plans and competency objectives. In this case, much of

the responsibility for participating in training and achieving critical basic skills is placed in the hands of the individual employee. As a result, while this flexibility may encourage employee participation, it also increases the risk against achieving standard organizational competencies.

Offer Participatory Training

Training that is passive and emphasizes lectures and note taking will likely be less effective than participatory instructional processes. Active instruction promotes competency building by engaging the employee and requiring participation. It also provides an opportunity to practice new skills and receive direct and relevant feedback that can be used to improve performance.

There are several instructional methods that can be used to foster active participation in training. Many of these are described below and include tutorial instruction, interactive computer exercises, job simulations, role playing, and case studies.

Basic Skills Curricula at the Ford Motor Co. and the United Auto Workers

A Company/Union team developed an interactive videodisc-supported course in industrial mathematics. The Skills Enhancement Program (SEP) focuses on improving the mathematical skills of employees. SEP includes learning and counseling opportunities in 6 areas: adult basic education, general educational development, high school completion, English as a second language, a basic skills course aimed at refreshing reading and math skills needed to take part in technical training, and an academic advising service to assist employees in identifying and pursuing basic educational goals. SEP courses are developed by a joint local committee composed of union and management representatives and local education providers that include local school district adult and community education department, community colleges, and 4-year colleges and universities. The training courses are designed to be flexible, permitting self paced instruction and open entry and exit. Participation in SEP is voluntary.

In another instance, the UAW-Ford Eastern Michigan Academy teaches basic skills to roughly 300 Ford employees annually. Classes in reading, writing, speaking and listening let students study through topics of interest to them. Training focuses on the underlying concepts rather than the mechanics of reading, and tries to teach participants how to learn rather than to learn specific facts. The program seeks to show participants the process of learning so workers can be more flexible and adaptable in the future, and gain the confidence needed to adjust to technological changes in the company.

Participant interest in the training is high, only 18 percent fail to return for additional training once they begin. The training facility is open long hours to enable workers from all shifts to attend training either before or after work. Workers are free to pick and choose what courses they want to attend. The training center hired its own instructors rather than draw from high school or vocational school resources which were faulted for not allowing the company and union adequate control over the curriculum and teaching.

The center recruits workers during management and union representative meetings that are conducted during working hours. When the training center first opened, assembly lines were shut down to permit all workers to attend training.

Sources: Bernardon, Nancy, "Let's Erase Illiteracy From The Workplace," Personnel, January, 1989, p.29, the Departments of Education and Labor. The Bottom Line: Basic Skills in the Workplace, Washington, D.C.: Government Printing Office, 1988. Petrini, Cathy (Ed.), "How Businesses Can Fight Workplace Illiteracy," Training and Development Journal, January 1989, p.18. McGee, Lynne, "Teaching Basic Skills to Workers," Personnel Administrator, August, 1989, p.42.

SELECT AN APPROPRIATE INSTRUCTIONAL MODEL

There are a variety of ways in which basic skills programs can be delivered. Presented below is a summary of five instructional methods.

Classroom Training

Classroom training is a low-cost way of training groups of workers. This method is usually most successful when the curriculum is constructed carefully and work-relevant material is used. Although the traditional classroom setting has the advantage of enabling one instructor to teach several workers, it can also promote a passive learning experience. Computer assisted instruction, tutoring, and other instructional techniques can be used to increase the participatory nature of classroom training.

Tutors

One of the most common instructional methods used in workplace basic skills training programs is one-on-one teaching, usually called tutoring. There are many advantages of tutoring:

- It permits an informal assessment of learner skills and individual targeting of training to the learner's ability level.
- The pace can be adjusted to each individual learner.
- Positive and supportive relationships can develop between the tutor and learner, which helps foster learner participation and involvement.
- Tutoring is particularly suited to working adult learners experiencing severe time constraints, as the training can usually be scheduled to accommodate the learner's personal schedule.

At the same time, tutoring is a relatively expensive instructional method and cannot be used alone to train large numbers of workers.

Work Groups

Work group instruction (small classes of about 3 to 10 people) represents a middle ground between classroom instruction and tutoring. Accordingly, it has some of the advantages and disadvantages of the two instructional approaches. Some of the advantages of this mode of instruction are that:

- It simulates work processes, which often involve working together;
- Students can learn from one another;
- Support groups can develop between learners; and
- It is less costly than tutoring.

In addition, scheduling work groups is generally easier than classes. Similarly, it is easier to adjust the level of training to be appropriate to a small group of learners, than for a large class.

One of the principal drawbacks of work groups is that they are highly dependent on the skill of the instructors or facilitators. Other disadvantages are that:

- Adults may be reluctant to participate in work groups because of concerns about confidentiality;
- Work groups are more expensive than classroom instruction;
- Unless all members of the group are at about the same competency level, it may be difficult to adjust the training to the learners' levels; and
- Scheduling may be difficult.

Computer-Assisted Instruction (CAI)

Computer-assisted instruction is being applied increasingly in basic skills training programs. Computer tutorials are most often used to supplement classroom basic skills or technical instruction, and are completed at the convenience of the worker, and at a skill level adjusted to each employee.

Several studies have documented the benefits adult workers derive from computer learning, such as privacy, feedback, scheduling flexibility, and control over the pace of instruction. Computer-based training is not without difficulties, however. Most important is the issue of designing a literacy tutorial that is functionally-based, yet appropriate to the adult learner's skills and interests. This issue, added to the high fixed costs of establishing a computer training facility, has led several large industrial programs to abandon their use of computers.

Interactive Videodiscs

The newest and most sophisticated instructional method is the interactive videodisc. The interactive videodisc is played on a device similar to a videocassette player. It allows workers to watch and listen to a training video and then respond to a series of prompts. Using pictures and audio, the interactive videodisc has many of the advantages of computer tutorial programs, but elicits more active engagement of the learner. The chief disadvantages of this method are its high costs and lack of flexibility.

Building Union and Management Support and Obtaining Budgetary Commitment

Once the basic elements of the training plan have been broadly defined, a written training plan, including estimated costs, should be presented to the company's management and union. The presentation of the development plan can be more or less formal, depending upon the number of people that will be involved in the training program if it is adopted. Presenters should summarize the findings of the needs assessment, and explain how the plan fits into overall business goals. The presentation should include an exposition of the recommended program and how it will

address the company's training needs. If necessary, options should be presented, along with alternative cost estimates.

In justifying a basic skills training program, the case for training must rest on the results from the needs assessment. These needs must be clearly linked to company performance in terms of lost productivity caused by the skill deficiencies, inability to respond quickly to new technology and other market changes, and product quality and workplace safety concerns.

Successful adoption of a basic skill program also rests upon the amount of support the proposal can gain within the company. A basic skills program will probably be just one of many programs or changes being advocated by different people in a company at a given time. It is essential that those responsible for training communicate with managers to build a coalition to support the basic skills training.

Alternative means of financing the program should also be included in the presentation to company management. Possible outside funding sources, department user fees, or allocations from a company training fund are some of the alternative mechanisms available. Depending upon the precise nature of the training program envisioned, financing alternatives are likely to be more or less appropriate. For example, a general adult literacy program would be more likely to include a public funding component. A program that targets workers largely from one department of the company would have greater rationale for training user-fee financing.

In building support for the basic skills training program, it is also important to focus energy on "destigmatizing" basic work skills training. The perception of such training as an integral part of an overall employee development plan should be encouraged.

Implementing the Basic Skills Program: Operational Considerations

Once the basic curriculum has been designed and management and union representatives signal support for the effort, attention has to be turned to program implementation. At this point, many important operational issues must be carefully addressed. Regardless of the quality of the curriculum that may be planned, selection of a delivery method, the development of an internal marketing plan, and the design of monitoring and evaluation strategies can have a significant impact on overall program effectiveness.

Selecting a Program Delivery Model

In the process of curriculum design, a decision will have to be made about the use of outside resources. Training and educational institutions, as well as consulting firms can be relied upon to assist with a variety of key program tasks, ranging from the needs assessment to curriculum design and program delivery.

While a natural inclination may be to design and operate the program internally, this can be a very demanding and potentially risky approach. Most important is that it will require specific expertise in program and curriculum design as well as the dedication of existing staff time to plan the program and provide instruction to employees. Moreover, an internally

operated program will also require the identification of company space, materials, and equipment to support training.

Because of the demands of a strictly internal approach to training, many firms have looked to outside resources to assist with some or all of the tasks involved with planning and operating a basic skills program. Outside experts and training institutions can be used to: 1) conduct the needs assessment; 2) develop the curriculum; 3) provide instructors and training facilities; or 4) support all aspects of the program. The choice over the most appropriate use of outside support should be based on an assessment of a company's existing resources and expertise, as well as the credibility and appropriateness of locally available education and training resources.

Regardless of the mix of internal and external resources that are used to support basic skills training, there are certain fundamental questions that need to be addressed. These questions should be considered during both the initial development of the program's curriculum, and negotiations with prospective providers. They include:

1. What specific tasks and functions will outside resources support?

2. Will training be offered on-site or at the premises of a training provider?

3. Will internal staff be used as instructors or tutors and if so, to what extent will they be trained?

4. To what extent will the training curriculum be customized to meet firm-specific skill and competency needs, or will an off-the-shelf program be used?

5. What types of reporting will be required of outside providers on the progress of workers and the outcomes of the program?

When looking to the outside for assistance with basic skills programs, there are two primary alternatives that employers can pursue. One involves leveraging external resources while the other focuses on purchasing services. Each is described briefly below.

Leveraging External Resources

There are several external resources that can be leveraged to meet basic skills needs in the workplace. One is other employers with similar needs. Small businesses, in particular, share the common constraint of limited resources and have often formed training consortia. These consortia are usually among firms in the same industry; they focus on common training needs, and pool resources to develop and deliver programs. In many cases, third party business organizations, such as Chambers of Commerce and Private Industry Councils, are relied upon to organize the consortium and assist with the development and implementation of a financing and training plan.

Another source of external resources are public adult education and training programs. Federally and state sponsored education and training programs, as well as community-based organizations and not-for-profit literacy centers are available in most local communities and can be accessed directly by employers. Some of these programs have strict targeting criteria while others, such as literacy centers, are usually open to the public. All of these

programs, however, offer the advantage of sharing the cost of the training.

There are several ways that publicly sponsored training and education programs can be utilized. The most simple approach is to arrange a referral and enrollment process between the employer and the program for a given number of workers. Other options include customized classroom training and on-the-job training. As a starting point for leveraging these resources, employers should contact their local Chamber of Commerce or Private Industry Council to identify available sources of training and any enrollment and related restrictions they might have.

Mixed In-House/Outside Assistance for Basic Skills Training at Spring Industries, Fort Mills, S.C.

This South Carolina textile manufacturing company used public funding and cooperative arrangements with local colleges to provide basic skills training to its employees. The company provides on-site facilities for classes in basic literacy and basic skills taught from a technical viewpoint. The company pays employees only for the initial orientation which occurs during working hours.

The company also began a pilot project in their Lancaster, S.C. plant as part of the "Governor's Initiative for Work Force Excellence." Specialists from a local technical college helped the company run the pilot program which teaches basic literacy (5th to 9th grade reading), GED preparation, and basic skills courses with a technical emphasis for certain occupations and trades. To teach the courses, the program uses a variety of providers including local literacy councils, adult education departments of area high schools, and technical schools.

Personnel managers at Spring Industries say that literacy training existed in the community, but that the on-site program made it easier for their employees to enroll in training and accommodate their work schedules. On-site provision of remedial training was also considered important as it underscored the company's support of the program.

Early in program development, the company conducted readability studies of their manuals, selected math and physics concepts which were used repeatedly in company training, and added pictures and labels to facilitate easier learning of their textile dictionary.

One problem the company experienced with its program was a high drop off between the number of people who were initially enthusiastic about training and the number who actually attended training once it was offered. Of the 1,800 people who showed initial interest in the company's program, about 1,400 followed through and enrolled, although early in the program the attrition rate was much higher. Personnel managers at the company attribute the high fall off encountered early in the program to a three month time lag between orientation and the start of classes that existed when the program first started.

Training is confidential and completely voluntary since the training involves literacy and basic skills, and participants may face stigma if their participation becomes known. Because

individual initiative is so central to success in the program, it must remain voluntary according to company spokespersons.

Source: McGee, Lynne, "Teaching Basic Skills to Workers," Personnel Administrator, August, 1989, p.42.

Purchasing Outside Services

In many instances, employers may decide that the need for flexibility and customization warrants the use of an outside contractor to design and operate the program. When this is the case, the employer faces several important design issues, such as whether the training will be offered on-site or at the training institution, the extent of firm-specific customization, and the use of in-house staff as trainers or tutors. An additional issue is the selection of a service provider.

The Request for Proposal (RFP) is the standard format for procuring training services. Specifically, the RFP is a written request by the employer asking prospective providers to submit proposals that state how and at what cost they will meet the employer's specifications and needs. In addition to specifying objectives and needs, the RFP usually contains a set of evaluation criteria that the employer will use to make a selection. These criteria and their use are very important since they will have a direct bearing on the quality of the program that is provided. Key criteria that can be helpful in making a decision include:

- Cost
- Experience and Credentials
- Instructional Method
- Approach Toward Adult Education
- Interaction With the Company
- Expected Results
- Financial Stability

Packaging the Program and Encouraging Employee Participation

One of the major differences between basic skills training for incumbent and newly hired employees concerns program recruitment. Recruitment is an important concern for any program targeting current employees, while new employees can easily be required to attend training as a condition of employment.

Avoiding the perception of the program as remedial or for employees lacking elementary reading and math skills is essential. If employees fear that they will be identified as lacking basic skills because they take part in the program, the program may fail for lack of participation--regardless of the need for such training. Accordingly, the program should be packaged as an addition to the general employee development training offered at the company, and a name for the program should emphasize its relation to overall skill on the job rather than with its remedial content.

Decisions about the structure of training, its scheduling, and where it will be held can also have an impact on employee recruitment and selection. Recruitment of current employees must be addressed

carefully as new programs can be interpreted with suspicion for fear that the change may endanger job security or signal a fundamental shift in company operations. Supervisors and other employee leaders should be used as channels of communication to reassure employees that such fears are unfounded.

Coordination of staff involved in the program is crucial in assuring communication about the purpose, scope, and implications of the new program are conveyed in a consistent manner across the company. Copies of the program design materials, and any publicizing materials should be provided to the managers and supervisors.

Managers and supervisors should be encouraged to tell their staff about the program, and to invite questions employees have about it. Some companies have had their training staff deliver presentations about the program at department or local union meetings. Some employers hold an "open house" at their training facility when it opens to give employees an opportunity to go and find out about the training on company time.

Employee newsletters, bulletin boards, and other routine communication mechanisms should be used to promote interest in the program.

Monitoring Program Results, and Maintaining Program Enrollment

Once employees begin to attend training, the program must be monitored on a regular basis. On-going monitoring serves the purpose of gauging the extent to which the program is achieving its operational objectives, including enrollment, participation and retention levels, and unit costs. Monitoring is also used to identify problems with the curriculum and instructional methods, and to initiate corrective action plans.

There are several ways to implement a monitoring system. These range from standard program operations reports and periodic visits to the training site, to informal discussions with training participants, supervisors, and instructors. Regardless of the specific monitoring plan that is established, it should be designed to provide periodic information on key program performance indicators that can be relied on to make necessary changes and improvements.

Evaluating the Program and Making Adjustments

Evaluation of the training program is important in determining program worth to company management, and in providing information needed to improve the program in the future. The training design plan should lay the ground work for the evaluation by setting program goals and performance measures. Pre- and post-training skill assessment tests, observation of training and participant performance on the job, and/or interviews with trainees, their managers, and other staff involved in the training provide three distinct sources of information about the program that can be used in the evaluation.

Evaluation should be on-going, being carried out annually or with each training cycle. The results of each evaluation should be written up and submitted to company management. The methodology for evaluating the program can vary from brief reports summarizing employee views of the program; to reports displaying and explaining figures on program participation and dropout rate; to more rigorous designs that attempt to measure program impacts.

Chapter Endnotes

[1]From Employment and Training Reporter, "Employers See Fewer Qualified New Workers, Skills Dropping Study Says", July 13, 1989, p. 1067.

[2]From Zemke, Ron, "Workplace Illiteracy Shall We Overcome", Training, June, 1989, p. 33.

[3]See: Miller, Kathleen, Retraining the American Workforce, Addison-Wesley Publishing Co., Reading, MA, 1987; and 1989 SHRM Training/Retraining Survey, Society for Human Resources Management, Alexandria, VA.

[4]Basic Skills: Testing and Training Survey, American Management Association, New York, New York, 1989.

[5]Ibid.

[6]Workplace Basics: The Skills Employers Want, American Society for Training and Development and U.S. Department of Labor, Washington, DC, 1988.

[7]SHRM, op. cit.

[8]Mikulecky, Larry, "Second Chance Basic Skills Education", Chapter 5 from Investing in People: A Strategy to Address America's Workforce Crisis. Background Papers, Commission on Workforce Quality and Labor Market Efficiency, Government Printing Office, Washington, DC, 1989.

CHAPTER 4

DEVELOPING A DEPENDENT CARE BENEFIT

Dependent care is a business issue for the obvious reason that employees cannot come to work unless their dependents are cared for. Study after study has shown that most working parents have trouble arranging child care, and that those with the most difficulty also experience the most frequent work interruptions. In recent years, more and more working parents have also been faced with the need to care for their aging parents. Although often unexpected, the need for elder-care can also cause frequent work interruptions as employees search for solutions that will satisfy the long-term care needs of their parents.

In response to the growing need for child and elder-care, companies have begun to introduce dependent care benefits into their compensation programs as well as flexible work-related policies. And they have done so without the burden of expensive subsidized on-site child and elder care centers. Today, there are a number of dependent care and related options from which to choose, including low cost information and referral services. When carefully selected, developed, and marketed to employees, these services can do much to meet the needs of existing and prospective employees.

The purpose of this chapter is to show how dependent care programs and related policies can be structured realistically for small and medium sized businesses as well as large ones. The chapter is organized around four major questions:

1. Why are dependent care benefits important?
2. How have employers responded to date?
3. How should a dependent care benefit be planned?
4. What types of programs and policies are available to meet dependent care needs?

Why Are Dependent Care Benefits Important?

Dependent care is important because it is as much a business issue as it is an issue for families and parents to address. For one thing, changing labor force demographics indicate the increasingly important contribution that women--the traditional family caregivers--are making to the economy and the individual firms that comprise it. Unless the dependent care needs of these women can be addressed successfully, companies will find themselves with even greater recruitment and retention problems as well as more frequent work interruptions.

In 1987, for example, there were about 64 million households in the United States. Of these, one in five were married-couple families in which the mother worked and had children under 14 years of age. An

additional 5 percent of households were headed by single mothers with children under 14. This represents a total of about 29 million adults, mostly workers, who are likely to require some sort of child care services. While many of these families are able to secure services themselves, a growing share need assistance and often look to their employers for help. This is especially so since so much of existing dependent care service is provided by someone other than a relative.[1]

Women have traditionally been the caregivers to the elderly as well as the young, and as more women have entered the paid labor force and the population has aged, the need for elder care has also emerged among employees. However, the potential demand for elder care is not as easily estimated as that for child care. We do know that 12 percent of the population in 1987 was over 65 years old, up from 9 percent in 1960. Also, most of this growth has been among those 75 years of age and older. There are now more than 12 million Americans who have celebrated their 75th birthday, and this group is expected to grow almost four times as fast as the population as a whole during the 1990s. By the year 2000 the Census Bureau estimates that the nation will contain 17 million individuals age 75 years or older. Clearly, this older population will strain the health care system, and place more pressure on working parents to help address health and related long-term care needs.

Working under the assumption that the average individual 65 years or older has two working children, we can anticipate a potential demand for elder care services at 63 million workers in 1990, growing to almost 70 million workers by the year 2000. Even if only 10 percent of the elderly are actually dependent on their children at any one time, this still represents a demand for elder care services of about 5 percent of workers in a given period. As their parents age, a significant fraction of the workforce will have a potential demand for elder-care services. The demographics are such that there are even more workers with aging parents than with young children.

Taking account of dependent care needs is also important because the growth of working women and dual working families has changed employee expectations of their careers and the balance between their commitment to work and their family responsibilities. Working women as well as men in dual working families are increasingly interested in finding ways to act responsibly to their family members and still satisfy their career ambitions. While they expect their employers to provide assistance with obtaining dependent care services, they also expect some degree of flexibility in their work schedules so they can care for an ill dependent, attend parent-student conferences, or vacation together. Firms that are unwilling or slow to address these growing needs for flexibility may also find themselves at a competitive disadvantage in recruiting and retaining a stable, productive workforce.

For companies that want to utilize the talents of working parents, it is clear that dependent care issues will be a major item on the business agenda. Part of the issue includes dependent care services while another part encompasses a range of policies to more flexibly organize the balance between work and family responsibilities. Thus, the challenge is not so much whether to address dependent care, but how to introduce policies and programs that respond to employee needs and are reasonable investments, given existing work requirements and financial constraints. By starting with a modest benefit or policy, even the smallest of companies can almost

immediately alleviate some of the pressure on workers with dependent care responsibilities.

Recent Employer Experiences With Dependent Care

Employers who have taken an interest in dependent care have discovered a number of positive results. To take just one example, a May 1988 article in Personnel magazine extolling the virtues of employer-supported childcare benefits reported that:

- Nyloncraft, Incorporated of Mishawaka, Indiana has attributed major reductions in turnover rates -- and a drop in absenteeism to less than 3% -- to its childcare programs. Lincoln National Life Insurance Company in Fort Wayne, Indiana says its childcare program led to reduced absenteeism and improved productivity. At Mercy Richards Hospital ... 34% [of surveyed employees] reported that the [child care] center had been a factor in their accepting jobs at the hospital.

Although most employers do not measure the benefits of their dependent care programs and related policies, there have been attempts to quantify the value of a few company-provided child care programs. The results from these efforts are quite positive and provide a strong basis for viewing dependent care as a sound business investment.

A comprehensive survey conducted by the National Employer Supported Child Care Project in 1982, for example, found a positive experience among most of the 415 companies with "major programs" in effect at the time. These programs, such as on-site child care centers, were reported to have led to beneficial results in the following areas (percentages represent fraction of employers reporting a positive effect):[2]

Percent of Employers Reporting a Positive Effect from Day Care Program	
Morale	**90%**
Recruitment	**85%**
Public Relations	**85%**
Turnover	**65%**
Absenteeism	**53%**
Scheduling flexibility	**50%**
Productivity	**49%**

Employers were less likely to report beneficial effects in the area of quality of the workforce (42%), equal employment opportunity (40%), tardiness (39%), or quality of services (37%). However, in the balance of cases there was either no effect or an unknown effect. Virtually none of the responses was negative.

While these results are impressive, they reflect what are essentially employers' impressions and views of whether the programs were worthwhile or not. The actual cost savings from reduced turnover, less arduous recruitment and the like were not calculated systematically.

A few companies surveyed by the Project did make an effort to calculate the effect of their childcare programs on the bottom line. Studies were conducted in the areas of turnover, recruitment, and overall costs and benefits. Seventeen of the 18 companies which collected such data found lower turnover rates for parents using the program than for their workforces as a whole. The average rate of turnover across all employees in these firms was 44 percent. In comparison, the turnover rate for users of the child care programs was only 19 percent.

Ten companies, mostly health care providers, estimated the yearly recruitment value of their child care programs in the two top job categories targeted for improvements. Based on the number of workers recruited and the average cost of recruiting, the savings from the programs were estimated as $16,400 per company annually. In responding to the National Employer-Supported Child Care Survey, 147 companies were able to measure benefits from reduced turnover, lower absenteeism, etc., and compare them to costs. Ninety-five percent of the companies reported that overall measurable benefits from the program outweighed total costs.

With results like these, one would expect a large number of employers to develop direct service day care benefits, and in fact a number have done so. According to estimates from a 1987 government survey of business establishments with 10 or more employees, about 25,000 provide direct day care services on-site or nearby the workplace. However, this represents only about 2 percent of all business establishments of that size in the United States.

Employer hesitancy in developing on-site child care centers is warranted, in part, by the expense and risk involved. On-site centers are not for everyone and make most sense when there is an obvious staffing problem that can be tied directly to child care concerns, and when the creation of a center is estimated to alleviate some of the pressure in an efficient, affordable manner. Otherwise, on-site centers may be too risky for many companies to justify, especially smaller employers.

More companies have developed other types of benefit packages and policies that are effective but do not include on-site care. These benefits have expanded dramatically of late, and by 1987 well over 100,000 business establishments were providing some sort of child care benefit or service geared toward improving morale, absenteeism, and turnover caused by family-related concerns. In addition, many employers also offer low cost work schedule policies to relieve work-family pressures.[3] These include:

- Providing access to dependent care information and referral services;
- Introducing flexible spending accounts, which allow employees to deduct child care expenses from their paychecks using pre-tax dollars (the employer contributes nothing except minimal administrative services);
- Adding dependent care benefits to an existing cafeteria plan (this can be done without increasing the maximum cost of fringe benefits); and
- Developing flexible work-schedule policies (such as part-time employment and flexible work hours) which benefit employees with dependents.

The growing importance of these and other dependent care programs is reflected in a recent survey conducted by the Conference Board. The Conference Board reported a four-fold increase in the number of surveyed employers providing child care assistance between 1986 and 1989.[4] While few employers had paid formal attention to the aging parents issue as recently as two years ago, the survey reported that elder care is rapidly becoming "the new" employee benefit in larger companies.

For example, AT&T recently agreed to provide unpaid leave for employees to care for their ailing relatives, and is establishing a resource and referral service for elder care which began operation in early 1990. Moreover, the American Association of Retired People (AARP) estimates that elder care services were provided by only 10 companies in 1987, but that in 1989 about 20 percent of corporations with 1,000 or more employees had some sort of benefit.[5] As with child care, the typical benefit is modest, along the lines of resource and referral services or flexible scheduling policies.

Although the trend is for more dependent care benefits, many companies, and especially smaller businesses, have still not developed even low-cost programs. In the same 1987 government survey mentioned earlier, only 3 percent of establishments were estimated to have either set up flexible spending accounts or provided assistance for child care through a cafeteria plan. Approximately five percent give their workers access to childcare information and referral services. The fraction of employers providing elder-care referral services is also somewhat small (but growing rapidly) according to a Bureau of National Affairs survey. Flexibility in work schedules and leave policies is more common, but is still only provided by three out of every five establishments.

The reluctance of many employers to address dependent care needs stems partly from perceived cost and risk. Health care insurance costs in the 1980s have outpaced inflation by a long shot, increasing total fringe benefit expenses substantially. Understandably, many companies have hesitated in developing new dependent care benefits when the costs for existing benefits are perceived as already too high. But as the experience of other employers has shown, it is possible to develop a low-cost dependent care benefit. If cost is the only concern, then there is little reason not to establish a flexible spending account or a flexible work schedule, for example. Some employers may simply not realize the range of options, which vary from very inexpensive to very expensive.

An additional concern often cited is that employees are accustomed to benefits that help everyone in the company. Therefore, some employers may hesitate to develop a dependent care benefit of no use to significant portions of their workforce. While employees do not blink when compensation varies according to one's position in the occupational ladder, paying benefits according to family status may be another matter.

Staff concerns about equity can be met by designing equitable benefits. Flexible spending accounts are financed by the government (through a reduction in tax revenues) not by employers. Within a cafeteria plan, one worker's dependent care benefit is another worker's extra vacation day. Additionally, information, counseling, and referral services can be established as part of a generic employee assistance plan serving all workers. In sum, services to workers with dependents can be provided equitably as well as inexpensively.

A dependent care policy of some kind makes good business sense in almost all situations. The key question is what exact form the benefit should take. By first implementing inexpensive benefits and then considering more elaborate ones, companies can begin to address the dependent care issue without unnecessary risk or expense. The recent experience of Lancaster Labs provides an encouraging example for the small as well as large business.

The Child Care Center at Lancaster Labs, Inc.

For employers who have hesitated in developing dependent care programs, encouragement comes from Lancaster Labs, Inc. (LLI), a small business in Lancaster County, Pennsylvania. An analytical testing company with a workforce of less than 400, LLI has shown that an on-site day care center can be developed which meets the needs of workers while requiring limited company subsidy.

The 112-child facility adjacent to the Labs is leased to a professional day care provider at near-market rates, with the company's employees given priority service. Community members can also use the center if there is space available. In addition to the reasonable rental of its building, LLI finances the maintenance, water, and sewer services for the center. In return for these rental, maintenance, and utility subsidies, which total no more than $10,000 per year, the children of LLI employees receive diapers, meals, and high-quality, center-based services at 20 percent below the going rate in the community. Day care expenses can be paid for with pre-tax dollars by making deductions into a company-administered flexible spending account.

LLI has found the day care center to be helpful in recruitment, retention, and public relations. The professional vendor takes full responsibility for management and liability risk. Turnover has been reduced among female staff and recruitment in general has been enhanced by the positive publicity generated by the center. The results are clear proof that even smaller businesses can develop on-site day care without extraordinary risk or expense.

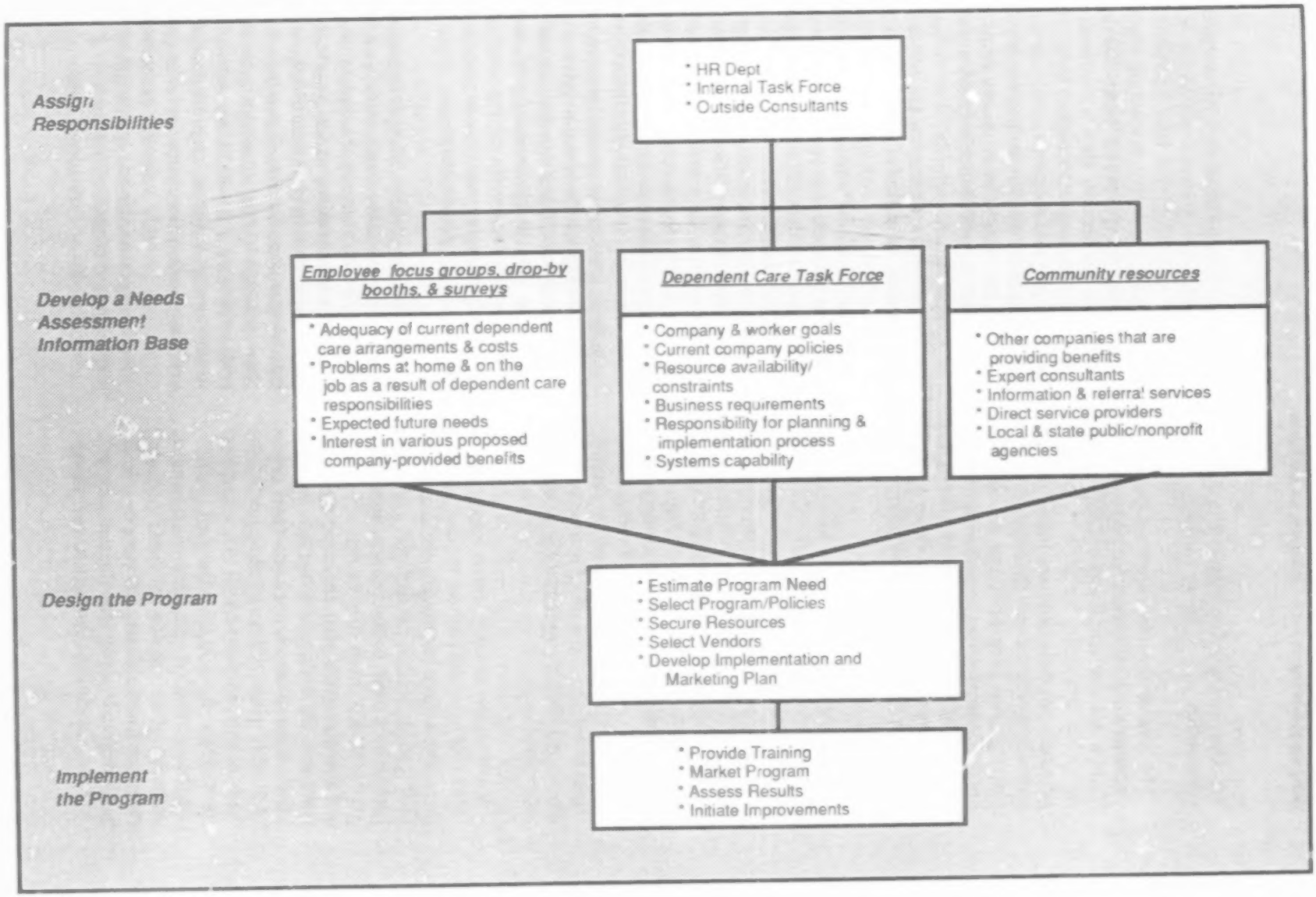
Planning For Dependent Care Needs

Developing a dependent care plan need not be a complex or protracted task. It can be accomplished expeditiously by internal human resources staff, a company-wide task force, outside consultants, or some combination of each of these. Still, because the planning task is so important to developing effective dependent care policies, it must be approached carefully and based on a mix of information regarding management priorities, employees' needs, business requirements, financial considerations, and existing community resources.

As shown in Exhibit 1, there are four critical steps to follow when initiating an effort to develop and implement a dependent care program. These steps are very intuitive and can be accomplished with limited resources, time, and intrusion into the daily conduct of work responsibilities.

The first step is to determine how the planning task will be managed and conducted. These two responsibilities are separable in that a single employee or internal team can orchestrate the planning process and still use an outside consultant to conduct the specific information gathering and design tasks. Thus, a first key task is to choose between individual and team responsibility as well as the use of outside consultants. The choice between an individual and team has usually been made

Exhibit 1
The Assessment and Implementation Process


Assign Responsibilities
* HR Dept
* Internal Task Force
* Outside Consultants
Develop a Needs Assessment Information Base
Employee focus groups, drop-by booths, & surveys
* Adequacy of current dependent care arrangements & costs
* Problems at home & on the job as a result of dependent care responsibilities
* Expected future needs
* Interest in various proposed company-provided benefits
Dependent Care Task Force
* Company & worker goals
* Current company policies
* Resource availability/ constraints
* Business requirements
* Responsibility for planning & implementation process
* Systems capability
Community resources
* Other companies that are providing benefits
* Expert consultants
* Information & referral services
* Direct service providers
* Local & state public/nonprofit agencies
Design the Program
* Estimate Program Need
* Select Program/Policies
* Secure Resources
* Select Vendors
* Develop Implementation and Marketing Plan
Implement the Program
* Provide Training
* Market Program
* Assess Results
* Initiate Improvements

on the basis of company size and complexity.

The use of outside experts depends on resource availability and internal expertise. Companies that employ benefit specialists may, for example, be able to manage primarily on their own, assuming that the incumbent is familiar with dependent care planning and programs, and has the time necessary to execute the tasks successfully. Eventually, however, most companies turn to outside consultants and firms to assist with one or another aspect of program planning.

There are several areas where outside experts can provide assistance. Some consultants specialize in providing services beginning with the planning process itself. These experts meet with in-house staff, present and discuss a wide range of options, and then assist in assessing needs, evaluating alternatives, and developing programs. The advantage of using outside experts from the beginning is that they can help select the right program to meet the needs of the work force and the goals of the company.

If a company already knows what services are likely to be established, another option is to select a firm to provide those services. This can be done at the end of the planning process, or early in the process so that the experts can help the company gather information and plan the program. For example, if a preliminary decision has been made to establish an on-site day care center that will be leased to an outside vendor, the vendor can be selected well in advance and participate in planning the construction, financing and/or operation of the center. Selecting one vendor for both planning programs and offering services is usually cost-saving, but may lock the company into a specific set of benefits before the information-gathering process is completed.

Once responsibility for managing and executing the planning tasks has been assigned, the second step is to develop a needs assessment information base. This task is intended to guide and inform the planning process so that a program or policy can be developed that meets employee needs and fits within the boundaries of what is acceptable and affordable to company management. Three major blocks of information are critical.

The first includes information on company policies, priorities, and resource and systems constraints. Whatever program or policy is planned, it must be consistent with what is practical and feasible to implement within the company. Flexible benefits and cafeteria plans, for example, have specific administrative requirements that the company will have to meet if it implements such a program. Similarly, flexible work schedules must not impede the company's service delivery or production process. For these reasons, it is wise to initiate the planning process by meeting with senior management to identify critical constraints that are binding or may be overcome in the course of program development.

The second source of information is focused on available community resources. Taking an inventory of the types of dependent care resources that are available in an area can help substantially when planning a specific type of service. It can also assist in identifying service options not yet considered. In addition, networking with trade and business organizations, such as Chambers of Commerce, as well as other firms, can provide valuable assistance in identifying resources and learning from the experience of others.

Many states and localities, for example, have established public dependent care information and referral networks. In addition, local community-based organizations often provide on-site day care assistance as well as referral services. Similarly, for-profit organizations have mushroomed to provide companies with information and referral services as well as on-site day care. Some of these are national in scope while others are regionally based.

Finally, employee input is critical if dependent care benefits are going to be effective and popular. An assessment of existing employee needs is at the heart of the planning process and its information base. Unfortunately, most companies do not obtain specific feedback from employees about their dependent care needs. A 1988 survey of 1,500 businesses by the American Society of Personnel Administrators found that employers have little knowledge of their employees' actual child care needs. Companies knew much more about tax advantages, impacts of family demands on work, and the costs of child care benefits.[6] However, without identifying employees' needs, it is extremely difficult to design effective programs. An assessment of dependent care needs among employees is critical to sound, successful planning.

Exhibit 2 presents the basic information that should be obtained from an employee needs assessment. This includes background data on the characteristics of employees and their families, information on current dependent care needs and problems, and feedback regarding the need for and interest in alternative programs and policies. In essence, the employee needs assessment should be designed to address four basic questions:

1. What are the family characteristics and responsibilities of employees and what dependent care needs do they have?

2. How are existing needs met, and in what areas do employees face difficulties?

3. What unmet needs exist among employees?

4. To what extent are employees interested in new or alternative types of dependent care policies and programs?

Typically, employee input is solicited using some combination of informal and formal data gathering. In larger organizations, group discussions or focus groups, combined with formal employee surveys is the best way to develop an understanding of workers' dependent care needs and how these can be best addressed. Focus groups help to clarify the nature of worker needs, while surveys provide a clearer and more accurate indication of how many workers are likely to desire particular services. Smaller companies, of course, can likely rely on group meetings to cover most of their employees, or even less formal mechanisms.

A more informal way of collecting employee information is through the use of a drop-by booth. These booths are often set up in the cafeteria or some other visible, common location where workers can easily stop by, collect information, discuss their needs, and exchange ideas. One successful model is to hold a child care or elder care in-house fair, where employees can meet various local service providers and gather information. A drop-by booth at the fair can be used to solicit advice and information from workers. The fair thus becomes both the first benefit offered and a logical step toward designing future benefits.

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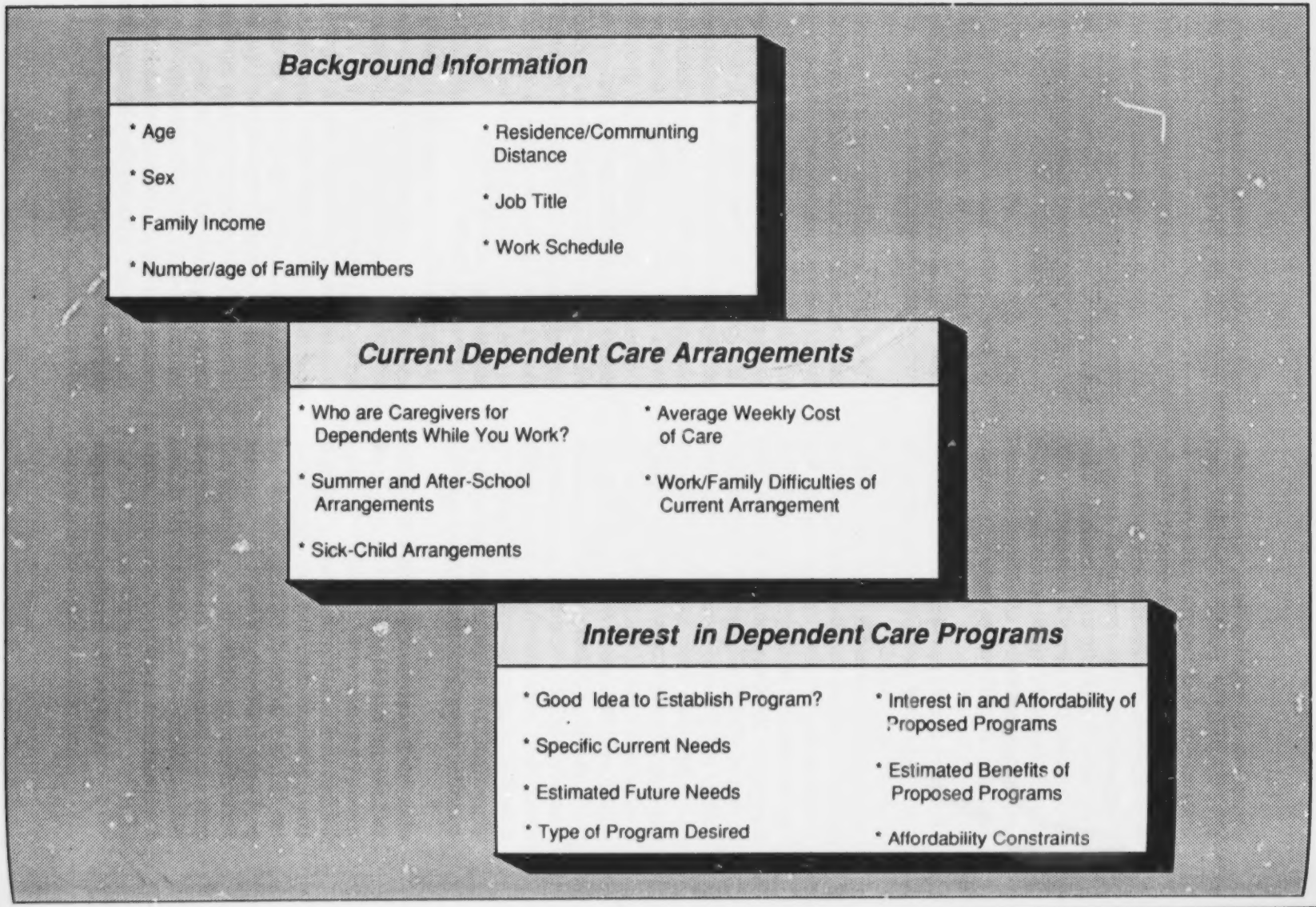
Exhibit 2
Typical Building Blocks of an Employee Survey


Background Information
* Age
* Sex
* Family Income
* Number/age of Family Members
* Residence/Communting Distance
* Job Title
* Work Schedule
Current Dependent Care Arrangements
* Who are Caregivers for Dependents While You Work?
* Summer and After-School Arrangements
* Sick-Child Arrangements
* Average Weekly Cost of Care
* Work/Family Difficulties of Current Arrangement
Interest in Dependent Care Programs
* Good Idea to Establish Program?
* Specific Current Needs
* Estimated Future Needs
* Type of Program Desired
* Interest in and Affordability of Proposed Programs
* Estimated Benefits of Proposed Programs
* Affordability Constraints

Employee data can also be a window into potential program benefits (e.g., how much the program may reduce absenteeism, turnover, and so forth). The data must be seen as a rough estimate, however, since employees can only guess about expected benefits. The value of obtaining employee feedback is illustrated by the experience of the Travelers Companies.

Elder Care Benefits at The Travelers Companies

The Travelers Companies in Hartford, Connecticut is an example of a large corporation which has made extensive use of employee information in designing dependent care programs and services (as reported by William H. Wagel in Personnel, October 1987). One of the first companies to address the elder care issue, The Travelers surveyed a random 20 percent of their home office staff who were at least 30 years old in June 1985. Over half of those contacted completed and returned the confidential survey. The results revealed that approximately one in five workers provide some care for an elderly friend or relative.

The Travelers asked a comprehensive set of questions concerning average hours of care per week, receipt of outside assistance, presence of younger children (about 80 percent of respondents had both elder care and child care responsibilities), type of services provided, and the events that precipitated workers' caregiving role. Four out of five respondents desired information about community resources.

The Travelers strategy was to respond to the workers' stated need for more information, to establish a flexible dependent-care spending account, and to promote the use of flextime and personal leave as options for those in need. Within a year after the survey was implemented, a caregiving fair was held for both employees and retirees. Representatives from community agencies provided information to workers on their lunch breaks, information that otherwise would have taken hours to research and collect. Information on caregiving was also added to the company library and to the interactive video services for employees, and a support group was established through the employee assistance plan.

It is instructive that The Travelers did not attempt to quantify the cost-savings of these programs. The provision of a wide variety of relatively low-cost elder care benefits flowed from a company philosophy that helping employees with family problems increases productivity and reduces turnover -- not from a careful analysis of costs and benefits. According to James J. Davis, Vice-President of Personnel Administration:

"We have found that all of these policies and programs help balance work and caregivingwithout sacrificing productivity. In fact, our premise here is simple: we believe that accommodating our employees' caregiving responsibilities actually increases productivity."

After compiling information on community resources and from management and employees, the next step is to use the results to identify and plan specific programs and policies. This is generally not a complex task, although it will vary depending on the nature of the program or policy to be pursued and company size. On the basis of the needs assessment information, the following five questions should be answered initially:

1. What needs do employees have and to what extent are they met satisfactorily by existing company policies and programs or through other self-initiated means?

2. What are the unmet needs and how can they be addressed by alternative programs and policies?

3. Which programs and policies are most feasible to implement given company policies, priorities, and systems, as well as financial considerations?

4. To what extent can the most needed and feasible programs or policies be met through existing community and other available resources, and at what cost?

5. What are the specific implementation requirements of those programs and policies selected as most viable to pursue?

Once these questions are answered and a specific approach is selected, it will be necessary to design the program or policy and implement it. Carefully planned implementation is important since it will influence success. In those instances when an on-site dependent care center is selected, it will be necessary to conduct a feasibility study.

Feasibility studies are crucial to the implementation of direct service options. Whoever conducts the study, whether outside consultants or internal staff, must be fully familiar with state and local zoning and licensing requirements, liability law, available state subsidies, and possible sources of community support, such as foundations, unions, and state and local government. A professional feasibility study will normally include both start-up budgets and operating costs. The cost of the study itself, if conducted by an outside consultant, is usually under $10,000, with the final expense varying with the complexity and size of the task.

Creating a Dependent Care Benefit: Alternative Program Models

When a company chooses a dependent-care program it is making a decision about how much to spend, which benefits to offer, and whether or not to use outside service providers. As discussed earlier, there are various program options from which to choose, depending on need and cost considerations. These options are summarized in Exhibit 3 and include:

- Information, counseling, and referral programs
- Flexible work and scheduling policies
- Financial assistance
- Community programs and private/public partnerships
- Direct service provision

Exhibit 3
Various Types of Dependent Care Benefits

Information, Counselling, and Referral Programs

- Vendor-Provided Referral
- Information Fairs and Drop-By Booths
- Counseling Services Through an Employee Assistance Plan (EAP)
- Videotapes and Publications
- Vendor-Provided Telephone Counseling for Latchkey Children

Flexible Work and Scheduling Policies

- Part-Day and Part-Week Work
- Variation in Work Day (Flextime)
- Flexible Use of Sick Leave, Personal Days, and Parental Leave
- Two Workers Share One Full-Time Job (Job-Sharing)
- Telephone Access to Dependents During the Work Day
- Arrangements for Working at Home
- Supportive Company Management

Financial Assistance

- Pre-Tax Deductions for Dependent Care Through Flexible Spending Accounts (FSAs)
- Financial Assistance Through a Nontaxable Dependent Care Assistance Program (DCAP)-- Can be Established for Subsidizing On-Site Services, Worker-Selected Services, or Employer-Selected Services
- Other Discount and Subsidy Programs

Direct Service Provision

- On-Site Child Care and Elder Care Centers
- After-School, Sick Child, and Summer School Programs
- Consortium Centers
- Family Day Care Networks

Community Programs and Public/Private Partnerships

- Cost-Sharing Arrangements with State and Local Agencies
- Community Projects to Expand Dependent Care Options

This section of the chapter provides a brief description of these five alternative types of dependent care benefits. The models are introduced sequentially to highlight first the range of possibilities that are least expensive and complex, and then to introduce the more costly benefits such as financial assistance and direct service provision. Exhibit 4 presents a summary of the major strengths and weaknesses of each model and can be used as a guide for the section.

Information and Referral Services

Information, counseling, and referral services are by far the dominant elder care benefit offered by employers. They are also the most common types of service provided by employers for workers with child care needs. The key advantage of this type of service is its low cost and ease of accessibility.

Information and referral services can be ongoing or arranged around specific events like an information fair. Their popularity flows from their value to employees and the relative lack of expense involved. Needed information on community services can take hours to collect individually; the company can save itself and its employees time and money by helping to identify the variety of local programs and service providers available already.

From the company's perspective, an initial information fair or information packet serves a number of useful purposes in addition to informing employees about available services. Through the development process, in-house staff will begin to grasp the scope of services available in the community. This can save money later by avoiding unnecessary program development costs. In implementing the fair, the company may also obtain a better sense of the true interest in services among employees, and receive needed feedback as to what further services would be most desired.

Ongoing information and referral services are being offered by a growing number of outside professional providers. These companies specialize in keeping track of the various dependent care options within a community. For a flat annual fee or on a per-employee-served basis, employees can directly access these providers to identify available services which will best meet their specific dependent care needs. In other instances, the outside firm will provide the company with a listing of available services that can be obtained by employees as needed.

Some information and referral providers maintain national networks, which are especially helpful for larger, multi-state corporations. An advantage of contracting with one of these providers is that the burden of updating information on community services is lifted from in-house staff. Especially in large communities, it is much more efficient for a contractor to provide services to many companies than for each company to develop and maintain its own network.

One limitation of local providers is that many employees have elderly relatives living in distant communities, which may need care on short notice. Also, national companies with many plants or interlocking branch offices will require a nationwide referral network. For both these reasons, a number of larger firms have begun to contract with the national information and referral services, which then subcontract with local providers.

Exhibit 4
Assessment of Alternative Dependent Care Benefits

Information and Referral Services

Description:

Can be Provided Through On-Site Fairs, Professional Referral Services, or Company Employee Assistance Programs (EAPs)

Major Strength:

Most Helpful when Dependent's Situation Changes Rapdily, as is Common With Eldercare

Major Weakness:

Available Community Services May Not be Adequate to Meet Worker Needs.

Cost:

Relatively Low, Can be Shared With Employee
Professional Referral Services Charge Up to $100 Per Worker Served.

Flexible Work and Scheduling Policies

Description:

Variety of Options to Choose From, Including Flexible Use of Sick Leave and Parental Leave, Flexible Scheduling of the Work Day, Part-Time Employment, Job Sharing, and Working at Home.

Major Strength:

Retains Employees as They Incur Life Changes.

Major Weakness:

Difficult to Build Flexibility into Some Jobs.

Cost:

Can be Minimal
May Increase Management Time Dedicated to Staff Scheduling and Monitoring
May Increase Fringe Benefit Costs.

Financial Assistance

Description:

Dependent Care Assistance Programs (DCAPs) are Nontaxable Fringe Benefits that Can be Used to Finance a Variety of Services
Flexible Spending Accounts (FSAs) Allow Workers to Pay for Dependent Care Expenses With Pre-Tax Dollars.

Major Strength:

Increases the Affordability of Dependent Care.

Major Weakness:

May Create Equity Concerns.
A Fringe Benefit Used by Only a Subset of the Company's workers.

Cost:

From Minimal (FSAs) to Substantial (Fully Subsidized Care).

Direct Service Provision

Description:

On-Site Centers, Consortium Centers
Summer, Sick-Child, and After-School Child Care.

Major Strength:

Expands Dependent Care Options and Can be Extremely Convenient for Workers.

Major Weakness:

May Entail Large Initial Investment of Time and Resources.

Cost:

Varies, Many Ways to Reduce Expense and Liability.

Community Programs and Public/Private Partnerships

Description:

Group Efforts to Expand Community Dependent Care Options and Services.

Major Strength:

Alllows for Sharing of Costs and Risks
Especially Helpful for Small Business.

Major Weakness:

Relatively Difficult to Tailor to the Needs of a Single Company's Employees.

Cost:

Can be Reduced Through Public Subsidies and Economies of Scale.

A much smaller number of companies now provide professional counseling to workers with dependent care needs. Those that do counsel workers generally do so within the confines of generalized employee assistance programs (EAPs). Counselors can help workers with emotional issues surrounding work and family, and provide information on community resources. Educational programs and support groups arranged by the staff supplement individual counseling.

Flexible Personnel Policies

Flexible personnel policies are a way of meeting work/family needs without dedicating additional resources to new employee benefits. Flexibility allows workers to better balance their various responsibilities to both their families and employers. Some options such as part-time work are common, while innovations such as work sharing (two workers sharing one full-time job) are still in the experimental stage.

At the outset, each company must decide how flexible it can be -- given its technology and job tasks, but from the worker's perspective, the more flexibility the better the chance of building a long-term relationship with the company. Some options, such as allowing workers to call their dependents and caregivers without notice, can be of little cost to the company and reap great benefits in employee satisfaction. Others, such as parental leave, require a greater commitment on the part of the company.

Many large corporations have taken the lead in experimenting with flexibility. In the emergency room of Beth Israel Hospital in Boston, a staff of 45 nurses is managed on 40 schedules. An essential aspect of managing the emergency room is to match the particular scheduling needs of each employee with the goals of the unit. The hospital staff is 78 percent women, and offers a 12-week unpaid job-protected maternity leave. Digital Equipment Corp. offers flextime, part-time work, and job sharing to employees looking for something other than the traditional workday.[7]

While large employers like Beth Israel and Digital are responding to a changing workforce, flexible personnel policies are in fact most common in smaller firms. According to a 1987 government survey, establishments with less than 50 employees are much more likely to have work-schedule or leave policies supporting dependent care than establishments with 250 employees or more.[8] The respective percentages of small and large employers providing such policies are as follows:

	Smaller Establisments (less than 50 employees)	Larger Establishments (250 or more employees)
Flextime	45%	35%
Voluntary part-time	36%	25%
Flexible leave	44%	40%
Working at home	9%	4%
Job Sharing	16%	16%

While smaller companies may be wary of the costs associated with direct benefit expenditures, they do have a comparative advantage in being flexible. Bureaucratic personnel policies, common in the management of a large workforce, are more easily avoided by the smaller firm. By responding to the needs of individuals on a case-by-case basis, the company can help employees solve the work/family dilemma and lower turnover among valued staff.

Flexible scheduling can take a variety of forms. Under flextime, workers vary when they begin or end the working day, and in some cases work more some days and less others, keeping the number of hours constant. A few workers in flexible jobs are able to vary the total number of hours they work per week, although typically a minimum number of hours is agreed upon.

Like most flexible scheduling policies, flextime is most common in the service-producing industries, and especially within retail trade. Jobs in which coordination between workers is less important, as in retail sales, lend themselves more naturally to variation in work hours. But even in manufacturing, where production typically requires the interplay of many workers simultaneously, 30 percent of establishments offer flextime.

Allowing employees to work part-time if they need to is another way to create flexibility. Many companies offer this option -- at times reluctantly -- only when incumbents working full-time ask for it. What is much less common is viewing a posted job as either a full-time or a part-time position, depending on the mix of applicants and their particular needs.

Employer concerns about part-time work revolve around productivity, management, and cost. There is a belief among at least some managers that part-timers will be less committed to the company than full-time workers, and therefore that the productivity of a half-time worker, for example, will be less than half that of a full-time worker. In addition, hiring more part-timers is also seen as increasing management headaches because there will be more people to manage, albeit for less time per person. And the overhead costs per hour associated with part-timers may exceed that of full-time employees, depending on how fringe benefits are prorated.

Concerns about part-timers are lessened when the part-time option ceases to be a case-by-case exception for incumbents, and instead becomes an accepted stage in a career path for committed, long-term employees (including new hires). As more workers shift away from full-time work, the essential management task is that of welcoming the transition. Part-time workers who are embraced as an essential ingredient in the company structure are much more likely to work diligently and remain on their jobs.

Welcoming part-time employees means making a sincere effort to accommodate their legitimate desire to work flexibly, and their desire to fulfill family responsibilities. By requiring part-time workers to attend meetings and functions during their off-hours, or by repeatedly calling part-timers at home, managers reveal their ambivalence about the new work arrangements, and subvert what could be a productive, long-term relationship.

A small but growing number of employers are experimenting with job sharing, wherein two part-time employees share a single job. The feasibility of this option is dictated by the content of the job; administrative and managerial workers, for example, are often required to be in the office during business hours to coordinate various services. When the job itself cannot become part-time, sharing the job can be a creative option. In practice, splitting a single job among two part-time workers may create a slight added expense, since a transition period is recommended (from once a day to once a week, and from a half-hour to a full day, depending on the requirements of the job), during which the job-sharers meet to coordinate among themselves.

A more dramatic shift from the typical personnel organization is work at home, intermittently, or on a permanent basis. Allowing workers to do their jobs from their homes reduces overhead costs and adds flexibility to scheduling, but also makes many managers uncomfortable. Monitoring home workers' productivity is difficult, especially in white-collar occupations. When discrete tasks can be assigned and monitoring progress is relatively easy, or when earnings can be tied directly to measurable output, working at home can benefit employees without sacrificing company goals. While some employees will flourish on the convenience of home work, it can also be quite isolating. Both managers and employees should consider carefully the implications of moving work out of the factory and office, into the home.

Flexibility is also possible with leave policies, including parental leave, leave to care for elderly dependents, and the flexible use of sick leave. Under current federal law, the only leave requirement relating to dependent care is upon the birth of a child. Maternity must be treated like any other disability under a company's short-term disability policy. Almost half of all establishments now offer additional flexible leave policies voluntarily. In 1988, 16 percent of medium- and large-size companies offered unpaid paternity leave, while 1 to 2 percent offered paid parental leave.[9]

While these leave policies are proliferating voluntarily, skeptical employers have a number of concerns. First, they worry about the hidden costs of holding jobs open during a leave, and the proposed requirement that the person on leave be rehired into the exact same job which he or she vacated. Second, employers may find the intermittent clause in the legislation burdensome, since it would allow at least some workers to spread leave time across a two-year period. Third, there is the cost of maintaining employees' health insurance while on leave. Finally, there is a philosophical belief in some companies that benefits should be negotiated or offered voluntarily, not mandated by the government.

Proponents of parental leave policies point to the beneficial impacts on maternal and child health, the economic security of women, and the occupational mobility of women, citing studies of policies in Great Britain, Sweden, and West Germany.10 As for the burden to employers of carrying health care insurance costs, the General Accounting Office has estimated the value of these costs under the proposed Parental and Medical Leave Act at about $194 million annually.11 The effective cost is likely to be even less than the GAO estimate, since this estimate does not factor out the costs to employers who are already providing benefits voluntarily and under various state laws.

Even under the proposed legislation, only 12 percent of establishments, employing 47 percent of all workers, are large enough to be covered. The current extent of voluntary benefits indicates that many employers believe unpaid leave policies to be a prudent and effective way of maintaining productive work relationships.

Financial Assistance Through Cafeteria Plans and Flexible Spending Accounts

The number of employers offering flexible benefit plans and reimbursement plans for child care and elder care increased substantially between 1986 and 1988. By 1988 almost four million workers, or 13 percent of the private sector workforce, were

eligible for one or more of these services, as opposed to only 6 percent in 1986. Mostly, this represents an increase in reimbursement plans.12

For over ten years, the IRS has authorized the establishment of dependent care assistance programs (DCAPs) as stand-alone benefits or within flexible benefit (cafeteria) plans. A cafeteria plan offers both core coverage, such as medical insurance, disability insurance, and retirement, and a flexible pool of money to be applied to various benefits. If dependent care is one of the options, employers can provide direct services, make direct payments to outside providers, or reimburse employees who have receipts for paid dependent-care expenditures. Cafeteria plans are advantageous in that they give the employee choice without necessarily increasing benefit costs. For example, a worker covered by his spouse's health insurance could select dependent care benefits instead of health benefits, with no net increase in costs to the company.

In 1988, cafeteria plans were offered to approximately 5 percent of all private sector employees in medium and large-size firms.13 An advantage of a cafeteria plan dependent-care benefit to the employee is that the company contribution is nontaxable under certain conditions. The IRS restrictions on the tax exemption indicate clearly that the program is designed for families without a full-time caregiver at home. For example, a married worker whose spouse has no income cannot collect benefits under a DCAP, unless the spouse is a full-time student, or is physically or mentally incapable of self-care.

Nontaxable benefits are limited to 50 percent of the earned income of unmarried workers. For married individuals, the maximum benefit is limited to 50 percent of earned income or 100 percent of spouse's earned income, whichever is less -- but in general not more than $5,000. Spouses who are full-time students are treated as having $200 per month of income in the case of one dependent, or $400 per month of income when more than one dependent is present.

Since DCAP benefits are tax-free, IRS regulations reduce the federal child care tax credit dollar for dollar for all DCAP benefits paid. Established in 1981, the child care tax credit lowers federal taxes by up to $2,400 for one child and $4,800 for two or more children. Credits apply to child care expenses only, and maximum credits are available only for families with adjusted gross incomes of $10,000 or less. As income rises the credit falls. For example, a family with one child and an income of $20,000 receives a credit of only $576. Lower income families may therefore need guidance as to which program (the DCAP or the child care tax credit) is more advantageous.

Eligible dependent care expenses under the DCAP include payments to a child care center, babysitter, or nurse; payments made for services performed outside the home; payments to a nursery school; and payments to a nondependent relative who provides dependent care services. Transportation, food, clothing, and educational expenses are not covered, nor are costs covered for child care centers (which provide care for more than six non-residents) that do not comply with all applicable laws.

For the purposes of the program, expenses must be for the care of a child under age 13 who lives with the employee and is claimed by the employee as a tax exemption, or for an individual who is physically or mentally incapable of self-care, spends at least eight hours a day in the employee's home, and is dependent on the employee for support. To promote equity across employees,

limitations are placed both on the size of the contribution and the portion going to individuals who own substantial fractions of the profits or capital of an unincorporated business.

Clearly, the least cumbersome option for the company is to reimburse employees for paid out-of-pocket expenditures, but this does require that the worker carry the cost of dependent care until repaid by the company. Direct payments to outside service providers create extra work for the accounts payable department, but are beneficial to the employee in that the service provider carries the cost of services until reimbursed.

Flexible Spending Accounts (FSAs) for dependent care offer the same tax-free benefits (and restrictions) as DCAPs, but with an important difference: FSAs are financed entirely by the employee. The only benefit to the worker, in fact, is a tax break: funds contributed to a FSA are nontaxable. From the perspective of the IRS and the Social Security Administration, that part of earnings which is allocated to an FSA does not exist, eliminating all federal, state, and social security payroll taxes on the income. To ensure equity across employees, the amount that higher-paid employees can contribute to the FSA is based on the amount contributed by lower-paid employees.

Since FSA income is exempt from social security payroll taxes, savings accrue to both the employer and the employee. For the employee, it will also mean a reduction in social security benefits upon retirement (since fewer lifetime dollars will have been paid into the social security trust fund). The restrictions on eligibility for FSAs are similar to those for DCAPs, and the dollar-for-dollar reduction in the child care tax credit also applies. But the FSA has further restrictions which limit its attractiveness to employees. The first of these is that all payments are reimbursements: the worker must present receipts for services to the company. Again, there may be a problem with carrying costs. A second limitation is that the savings to the worker is an abstraction; it is not a cash payment, but rather a reduction in taxes and tax witholding. Employees may need to be convinced that the FSA is worth the trouble.

The most restrictive aspect of the program is that the employee must decide before the beginning of the year how much money will be withheld in an FSA. For example, a worker with a dependent parent at home may estimate costs at $1,200, and then sign up to have that much withheld during the coming year. If paid monthly, 100 pre-tax dollars would be deducted from each paycheck and placed in the FSA. This money is then paid back to the employee as he or she submits paid receipts for dependent care services.

As long as the worker spends and presents receipts for at least $1,200 worth of dependent care during the year, he will be reimbursed as from a savings account (without the interest). When a claim is approved funds are withdrawn to reimburse the employee. However, if an employee spends more than $1,200 on dependent care, only the first $1,200 will be tax-free. Even worse, if he spends less than his estimated $1,200 on dependent care, the unspent money is forfeited.

Funds which have been committed to the spending account but which are not used for dependent care expenses can only be released following a family or employment status change, including marriage, divorce, birth or adoption of a child, death of the spouse or dependent, loss of spouse's employment, increase in the number of dependents, unpaid leave of absence, or a

catastrophic medical condition in the employee's family.

While the plan-ahead requirements of flexible spending accounts may scare off some employees, the advantage to employers is that FSAs require virtually no ongoing expenditures. Once put in place, the only cost to the company is administrative -- managing the flow of dollars and paperwork back and forth from the worker. This extra administrative burden can be financed by interest payments on the withheld funds, which accrue to the employer. Some companies which have set up FSAs have contracted with outside providers to administer the program, hold onto the funds, and make reimbursements to employees. These services are generally provided at no charge; the contractor makes a profit by collecting the interest from the withheld funds.

Direct Service Provision and Partnerships

The most well-publicized form of a dependent-care benefit is the "on-site" or nearby child care center. Relatively unknown before 1980, a number of centers have been developed in the past decade. Typically, companies establish centers on-site or nearby in response to either a serious (or projected) problem with recruitment, turnover, or absenteeism, or as part of a broader policy of progressive personnel management. While on-site elder care is a possibility, this is a virtually untested benefit to date.

Most experts believe that center-based care is, on average, superior to family day care. Center staffs tend to pay more attention to child development and education, and are often better trained to do so than in-home providers. Centers are also operated by multiple adults and are often large enough that a full-time administrative director is warranted (or required by state law). This enhances the ability of the center to plan services and develop programs. Additionally, a single center is also perceived by participating businesses to be easier to oversee than a large number of family day care providers.

On-site, center-based care is also preferred by working parents because of its convenience. When it comes to day care, whether the center is downstairs from the office or a ten-minute drive away does matter to the working parent. Workers benefit greatly from the convenience of visiting their children on break as well as during lunchtime. If a child is sick or injured, the advantages of on-site care cannot be overestimated. Productivity is also enhanced through on-site care, because children's needs can be met much more efficiently by parents directly, rather than at a distance on the telephone.

Despite the clear advantages of on-site, center-based care, parents will often choose to maintain their children in family day care or with relatives. Why? The usual reason is cost. Many parents are often shocked by the expense of center-based care, which currently has a market rate of as high as $220 per week for infants (the most expensive age group for child care). Family day care can be much less expensive, especially when provided by friends and relatives. Therefore, a central concern in planning an on-site center is affordability, both for the company and for the working parent.

When creating an on-site center, critical planning concerns include the following:14

- What exact services will be provided, in terms of age groups, number of child care slots, hours of operation, facilities, and programs?

- What supplementary services will be offered, including transportation, health care, resource and referral services, and educational programs for parents?
- What will be the legal, management, and operational structure of the center?
- What are the goals as to the affordability of the program and equity across employees?
- How can high-quality care be provided in a way that is affordable for both the employer and the employee?

Deciding on the Services to Offer

In planning on-site services, the first step is to determine the mix of services, hours of operation, and age range of the children that the center will serve. Choices over these decisions can have an important influence on investment costs and user charges, as well as the utilization of the center by employees.

Centers are typically open five days per week, and may provide services for infants (6 weeks to 18 mos.), toddlers (18 mo to approx. 2 1/2 years), and pre-schoolers, as well as to older children both before and after school and during the summer. Generally, the expense of care tends to decline with age, since in many states, the younger the child, the lower the mandated child-provider ratios. In many communities, center-based infant care is quite scarce (since it is the least profitable or most expensive to provide). Therefore what are often the most beneficial services for the working parent -- infant and toddler care -- can be relatively expensive services to deliver.

Centers normally operate about 12 hours daily (e.g. 6:30 a.m. to 6:30 p.m.), with the standard fee covering up to 10 hours of care per day. For example, the parent who drops the child off at 6:30 a.m. would have to pick up by 4:30 p.m. to avoid additional charges, while drop off by 8:30 a.m. would require pick-up by 6:30 p.m.. This kind of flexibility is advantageous to both the worker and the company. An additional benefit of on-site care is that the hours of operation can be tailored to the needs of the participating businesses. Some centers provide diapers and full meals, while others offer only a snack. For parents, the provision of full meals (usually breakfast, lunch, and a snack) is a big time-saver and an important benefit.

Additional services which can add to the attractiveness of centers are unplanned drop-ins (when space is available and other day care arrangements fall through), drop-ins for slightly ill school-age children, and well-planned curricula which emphasize social and educational development as well as caretaking.

A good starting point for determining how to structure the services of a center is the employee needs assessment. Some questions on the assessment should be aimed at employee interest in on-site care, including cost limitations. This information can be used to develop alternative service strategies for comparison on the basis of cost and responsiveness. Depending on interest levels, affordability to the company and employee, and feasibility of implementation, an initial service strategy can be set and planned.

Legal and Administrative Structures

There are four basic models for the development of on-site care: 1) as a part of the business (either a line department or profit-making subsidiary); 2) as a separate

non-profit corporation; 3) through contract with an outside company (usually for-profit) which specializes in operating child-care centers; and 4) as a consortium with other businesses and local institutions.

Few companies have developed child care as a department or profit-making subsidiary, because of the legal risk and the lack of in-house expertise. In addition, a number of consultants advocate the creation of a separate not-for-profit entity, because such a configuration affords the optimal mix between oversight and limited liability. Not-for-profits are also eligible for a broader base of public subsidy than for-profits.

Typically, some combination of company management and working parents comprise the Board of Directors of the not-for-profit, which, as a separate corporation, is not legally bound to the company itself. The Board sets general policy for the center. Usually, a paid center director is selected by the Board to administer center operations on a day-to-day basis. A good example of the use of a public subsidy by a not-for-profit was established by Grieco Brothers (see box below).

On-site Day Care at Grieco Brothers

One cost limiting approach to establishing an on-site center is aggressively pursuing outside sources of funding. Grieco Brothers of Lawrence, Massachusetts, a manufacturer of men's finely tailored clothing under the Southwick label, is one company that took such an approach. This family business was faced with a serious absenteeism problem in 1984, and had little money with which to solve it. Turnover and absenteeism were so bad that the company had to hire permanent floaters to cover missing workers. The predominantly female production crew had few affordable child care options; on snow days some women simply brought their children to work with them.

Grieco Brothers solicited the help of a consulting company in the Boston area to overcome the child care dilemma. Grieco knew that it could not afford any substantial outlay of its own funds, so the challenge of the project was to solicit outside sources of support. Obviously, the need to solicit funds slows down the planning and development process. It took one and one-half years to develop a plan, find funding, and open the center. Stumbling blocks included the lack of start-up money, and the fact that employees could not afford unsubsidized slots -- therefore it was necessary to find a funding conduit for both start-up and ongoing costs. The site was large, but needed a lot of work. Initially, Grieco envisioned opening the center for their employees only. Much was done on a shoestring.

The project raised $75,000 in start-up money. Key to raising money was a contribution of $20,000 from the Grieco workers' union. Once the union was on-board, many others became interested. Polor Clothing, located across the street, was asked to contribute after the decision was made to open the center up to the community. Foundation money was also tapped.

The center was set up as a nonprofit corporation, with parents and company representatives on the Board of Directors. The nonprofit was eligible for foundation and state money, and by setting up a nonprofit entity the liability of the employer is limited. As opposed to contracting

out to a service provider or running the center as a functional department within the company, establishing a nonprofit entity allows for parent/corporate control with limited liability. Key to a successful center, whether setting up one's own nonprofit or contracting out services, is hiring a professional, experienced director.

The Grieco Brothers center was set up as a minority business enterprise, and obtained a state operating contract. This ongoing contract subsidizes the center, so that care only costs Grieco employees about $10-50 per week. The company's only significant expense to date has been in the form of in-kind contributions. Both the company management and the employees are thrilled with the center.

For-Profit and Other Vendors

While for-profit child care vendors do not qualify for most public subsidies, they have become a popular option for companies interested in providing on-site child care. The most attractive quality that the experienced for-profit vendor brings is the ability to handle all aspects of planning, development, and implementation. The most knowledgable contractors come equipped with architectural blueprints, employee needs assessment instruments, feasibility studies, implementation programs, and a network of experienced administrators. Reputable contractors also buy group insurance policies which cover all of their centers, and lower the cost of liability insurance. These efficiencies can result in substantial savings for the contracting business.

Within the professional child care community there is debate over the use of for-profit contractors. Some experts believe that child care is like a public service that should not be subject fully to the demands of the free market. When important decisions are required which imply a trade-off between quality care and profitability, critics argue that the for-profit contractor may not have the best interests of the child in mind. It is the same argument that is made in opposition to for-profit medical care. Against this argument is the positive experience of a growing number of businesses with reputable for-profit contractors.

Whether not-for-profit or for-profit, the use of outside management can save the company considerable time in administering the day-to-day operations of the center. This is especially true if the center has a full-time director, as is required by most states in day care centers above a minimum threshold size. Many companies report that a first-rate center run by a competent director requires virtually no time to manage between annual contract negotiations. Clearly, the success of an on-site center depends critically on both the overall ability of the contractor to provide efficient, high-quality services to business, and the experience and competence of the center director. Time spent carefully selecting a vendor and screening applicants for the director position is a very good investment indeed.

Although for-profit centers have the option of informally reserving child care slots for the use of the company's employees, like not-for-profits they can benefit from taking in some children from the community at large. Community involvement may in fact be necessary for the relatively small company, which will likely not be able to fill

a child care center of even modest size. There are benefits of having at least 40-50 slots in a center, with the most important advantage being the ability to afford a full-time administrative director.

Tapping local demand can also be the key to making a day care center affordable for employees. In the past, conventional wisdom cautioned against establishing a center unless the employee base was of a certain size. Now it is clear that by aggressively pursuing cost-sharing, smaller companies can lower expenses substantially, and make on-site care feasible. Many centers give first priority to employees from the participating business, and charge the workers rates which are in part subsidized by the market prices paid by community parents unaffiliated with the company.

Consortium Approaches

For the smaller business especially, collaborating with other private and public institutions is an effective way to reduce both start-up costs and ongoing expenses. Consortia usually work through local business groups, such as Chambers of Commerce or local Private Industry Councils, or are centered on clusters of businesses such as those in an office park. In fact, office park managers are finding that planning a center is a good way to attract businesses to a new development. The developer and park businesses can then work together in planning the center and deciding on the extent of employer subsidy.

A clear advantage of consortium participation is that it allows a company to plan an on-site center by sharing cost, risk, and managerial time. Typically, the consortium will be led by a not-for-profit agency unaffiliated with any of the participating businesses. A good example of a consortium centered around a not-for-profit institution is the Highland Park Day Care Center in Woonsocket Rhode Island (see box below).

Highland Park Day Care Center

Most successful consortiums require a catalyst to see them through. In the case of the Highland Industrial Park's day care center in Woonsocket, Rhode Island, that catalyst was the nonprofit Woonsocket Industrial Development Corporation (WIDC) and its Executive Director, Scott Gibbs. In 1987 Gibbs received a call from a local business leader who wondered what, if anything, WIDC was doing about day care. Sensing that it was time to move on this critical workforce issue, Gibbs put together a consortium consisting of participating businesses, the WIDC, the Northern Rhode Island Private Industry Council, and Woonsocket Head Start and Day Care, a respected day care and pre-school provider in the area.

Looking back on the development of the center, which opened in January 1989, Gibbs sees several critical ingredients that brought it all together: the commitment of top management from a few of the area's most important businesses; the use of a well-known local provider (Head Start); and an organizing catalyst (WIDC) which had the trust of the business community, the real estate expertise to develop the project, and which was willing to dedicate substantial resources (especially of time and effort) in seeing the project through.

Gibbs received corporate commitments to the project early on, which proved invaluable when soliciting public and private donations. Grants totaling more than $250,000 were secured from the city of Woonsocket, the state of Rhode Island, the regional Private Industry Council, and private foundations. WIDC donated the land at the foot of the industrial park for the center, which has 88 day care slots.

Highland Park was developed in a way that required little effort on the part of participating businesses. Companies sign contracts to reserve day care slots at the center, at an annual price of $2,000 per slot. By reserving a slot for its employees a company not only is increasing the availability of care, but it is doing so at a price that is below the market rate for center-based care in the area.

The goal of WIDC in developing Highland Park Day Care was to increase day care options for a wide range of workers in Woonsocket. Thus only 64 of the 88 slots in the center are reserved for workers at participating corporations; the rest are filled with children from families with low-to-moderate income. These lower-income families pay less than the corporate-sponsored parents for care at the center, and some qualify for state subsidy.

The center serves a variety of parents and children, and is financed by a combination of public, worker, and corporate dollars. The project was designed so that the grants and corporate subsidy support all of the development costs (including the mortgage), and user fees pay for ongoing center operations. Neither WIDC nor the participating businesses are involved in the management of the center, which is handled by Head Start and its center director.

After the first year of operation, 30 of the corporate slots were sold, and all of the income-eligible slots were filled. Some of the participating businesses have waiting lists and are being approached to buy more slots. Once all of the slots are contracted for, the center will be full, the amount of center-based care in Woonsocket will have increased substantially, and the project will be completely self-financing.

Inevitably, consortium participation is likely to offer less convenience and flexibility to workers than a single-company on-site center. In working with other businesses, the company may have to make compromises as to location, hours, and service provision, so that all members of the consortium are well-served. The number of workers using the consortium center from a participating business will tend to be smaller than if the center was developed specifically for a single company's workers. So, while the consortium may well be less expensive to participate in than a stand-alone center, it also may be a relatively less important benefit for the company's working parents.

Veterans of consortia efforts believe that there are several elements of a successful collaboration. First and foremost, one or more people must serve as catalysts for the project. Someone, whether it be from the company, union, not-for-profit institution (such as the Chamber of Commerce, Private Industry Council, or Industrial Development Corporation), or an outside consultant, must take primary, day-to-day responsibility for the project. Without such dedicated effort, busy people will find it

difficult to launch a complex collaborative effort.

Another key ingredient to a consortium is active support from top company management. The project will have a cost in either time, money, or both. Participation in a consortium is a visible undertaking which chief executives will want to know about and consider carefully before sanctioning. Without such support, the necessary dollars or time commitments may never be forthcoming.

The consortium should also have within it expertise in real estate and in providing child care to business. If such expertise is lacking within the participating institutions, reputable consultants can help fill the gaps. Consultants can provide the necessary catalyst, develop needs assessment surveys and feasibility plans, aid in fund-raising and grant-writing, and see the project through to completion. As always, consultants in this area vary in quality and experience, and a careful consultant selection process could be the most important task of the consortium committee responsible for the oversight of the project.

An example of a successful community-based child care consortium is the Lowell, Massachusetts Private Industry Council (PIC). Many public and private employers in the Lowell area were having difficulty recruiting and retaining entry-level workers when the Massachusetts economy boomed in the mid-1980s. Fourteen private employers and 12 public employers, working through the PIC, formed a Child Care Committee. The expert consultant on the project, Marie Sweeny of Boston-based Workplace Solutions, believes that the success of the effort was related directly to the creativity and commitment of the committee.

One of the functions of the PIC was to oversee local programs for welfare mothers enrolled in the state-funded "ET" training initiative. Retaining enrollees in training and then on-the-job was a problem for local employers. Once it was determined that day care was part of the problem, space was located for a child care center in the old mill building where training activities were taking place. The purpose of the center was twofold--to help enrollees during training and to expand child care options for the workers of the area. The goal was to provide both infant/toddler care and after-school care.

The Lowell project illustrates that successful efforts do not necessarily require company expenditures, only commitments of time, creativity, and effort. Critical issues for the PIC Child Care Committee were licensing, finding a contractor, and -- most crucially -- fundraising. It was able to raise $200,000 up-front, tapping city, state, union, business, and foundation monies. The local carpenters' union agreed to use the site to run an on-site training program, and contributed labor without charge. To lower the cost of child care to local workers, the PIC is working with the state to provide some subsidized day care slots within the center.

Affordability and Equity

The most common perceived obstacle for companies when establishing centers is the expense involved. Start-up costs can be substantial, at least $150,000 in most cases. Companies should factor the first six months of program operations into the startup budget, as it takes time to enroll children into services.

Ongoing expenses are also an issue, since a day care slot now costs between $100 and $200 to operate per week. Employers are wary of shouldering such costs, as are

parents -- especially those whose earnings are relatively low wages. In consequence, many companies, and especially smaller employers, have relied on consortia and developed innovative models to share costs and make centers affordable for both the firm and the working parent.

Key to affordability is the issue of equity. Full-cost, center-based care will be too expensive for all but the wealthiest families. This does not mean that only professionals will use a high-cost center. What matters is total family income relative to total family expenses. Married couples will be more likely to purchase more expensive services than single parents, and the higher the couple's combined income the more attractive will be the services. Those with many children will be less able to afford high-cost care than those with one child.

The lower the total costs of the center, the less the need for either extensive corporate subsidy or high rates for parents. The most equitable centers are those which either have sliding scales based on income, or the relatively low prices for all employees. Many companies have found that best solution to equity is to offer one reasonable set of prices to everyone, through a combination of prudent cost-containment and moderate company subsidy.

Cost-reduction has been accomplished through the following creative approaches:

- **Establishing a not-for-profit and aggressively pursuing public subsidy.** Many states make monies available to subsidize non-profit day care slots for income-eligible families. This approach is most successful when business employ large fractions of lower-wage female workers, and in those states where child-care programs are relatively well-funded.

- **Cost-sharing with other businesses and local non-profit institutions.** Consortium approaches lead to efficiencies in development, administration, and day-to-day expenses.

- **Creating a hybrid between subsidized child care slots for employees and market rate slots for unaffiliated parents from the community.** This cross-subsidi- zation can lead to savings for both the company and its working parents.

- **Adapting existing space within the company to make room for a child care center.** Avoiding new construction can reduce start-up costs significantly.

- **Being a leader.** In a community with a shortage of high-quality child care, the first few centers established may generate significant positive publicity. This can help fill up the center quickly, lowering average costs of care.

- **Thinking carefully about the affordability of care to the employee.** Both start-up and ongoing costs can vary substantially, and these costs will be borne by either the state, the participating institutions, or the parents of children using the center. Aggressive and creative efforts to lower costs (while maintaining acceptable quality) will avoid large company subsidies, and will allow for prices which are within the reach of the average working parent.

One example of a relatively small company which has made good use of cost-sharing to increase affordability is Fabrican in Fall River, Massachusetts. This curtain manufacturer employs approximately 250 workers, mostly women recruited from the local immigrant population. Following a devastating fire in the mid-1980s, the company decided to construct a free-standing day care center as part of the rebuilding process. The goal of the day care center was to recruit from the untapped labor pool of mothers at home with their children. Clearly, to recruit from this market required reducing the cost of care to the employees.

To limit start-up costs, Fabrican secured a loan from the Massachusetts Industrial Finance Agency. The $650,000 in start-up costs, while substantial, are reflected in a new company asset--an attractive single-story building. Having the ability to convert the building into desirable office space, if required in the future, lowered the risk to the company of the construction project.

A local not-for-profit service provider is managing the Fabrican center, with the company's subsidy coming in the form of free rent during the first year and a low rent in the subsequent four years. In return, company employees using the center pay only $1 per hour in day care expenses. The bulk of the nonprofit corporation's revenues are derived from parents in the community who fill the majority of the over 100 day care slots in the center, and pay competitive market rates.

Emergency and Sick-Child Care

Most companies are wary of providing flexible subsidies for dependent care that represent direct dollar commitments -- these expenditures may be substantial and may not always translate into efficiency improvements. A few companies have decided to subsidize a variety of programs through a reimbursement plan, or through cafeteria plans such as those described previously. But given cost considerations, the cutting edge in direct services is tailoring programs to observable human resource concerns within the company.

One such example is emergency back-up arrangements and care for the mildly sick child. For school-age children, the most common unexpected day care need occurs as a result of mild illness, but snow days, teacher strikes, and the like can also create a need for care. For infants and toddlers, mild sickness can be the issue, or the last-minute falling through of regular day care arrangements. These kinds of unexpected situations are a primary cause of parent absenteeism at work.

For working parents in jobs that lend themselves to flexibility, a solution to the unexpected dependent care dilemma is flexible work hours. A day missed to care for a sick parent can be made up, or salaries can be adjusted. But in some cases, the contribution of the worker is too critical to allow for much flexibility. An example is nursing. Due to the shortage of available nurses, some hospitals have had to close down selected units. Under these conditions, absenteeism is a critical issue. In response, some hospitals, law firms, and other businesses have established services for emergency child care.

Often, for equity reasons, employers feel compelled to offer emergency services to all employees, even though all are not critical. Thus emergency services can be expensive. One law firm in D.C., whose lawyers bill clients at hundreds of dollars per hour, estimated the cost of emergency care at $50,000, and the savings in reduced

absenteeism and increased billing at $150,000.

There are three basic models for emergency care services: establishing a mini-day care on site; contracting with a number of family day care providers near the office; and contracting with on-call providers to go into the employee's home. In practice, these services usually have been partially or fully subsidized by employers. Thus the service makes most sense for workers whose absenteeism, given the nature of their jobs, is very costly in terms of billability, service provision, and ultimately, the bottom line.

Chapter Endnotes

[1]U.S. Department of Labor, Report of the Secretary's Task Force on Child Care, "Child Care: A Workforce Issue," 1988.

[2]Results from the Project are reported in Employer-supported Child Care: Investing in Human Resources (Sandra L. Burud, Pamela R. Aschbacher, and Jacquelyn McCroskey, Dover MA: Auburn House Publishing Co., 1984). Although outdated when it comes to referral services (and silent on the eldercare issue) this book is an information-packed how-to guide for employers. Based on results from surveys and site visits covering 415 employer-supported child care projects in 1982, it walks the interested large corporation or small business through the various steps required to decide on a benefit package and establish a program.

[3]See Howard V. Hayghe, "Employers and Child Care: What Roles Do They Play?," Monthly Labor Review, September 1988.

[4]As reported in Personnel, May 1989.

[5]As reported in The New York Times, June 4, 1989.

[6]As reported in Personnel Administrator, April 1989.

[7]As reported in The Boston Globe, September 20, 1989.

[8]Hayghe, September 1988.

[9]These statistics are from a U.S. government survey, as reported in the Daily Labor Report, April 5, 1989.

[10]As reported in The Employment and Training Reporter, 3/22/89.

[11]Statistic from GAO report HRD-88-103, May 1988.

[12]Results from a government survey, as reported in the Daily Labor Report, April 5, 1989.

[13]As reported in The Daily Labor Report, April 5, 1989.

[14]This section draws substantially from Sandra L. Burud, Pamela R. Aschbacher, and Jacquelyn McCroskey, Employer-Supported Child Care: Investing in Human Resources, Dover, MA: Auburn House Publishing Company, 1984.

Part II

Case Studies

INTRODUCTION

This part of the monograph includes the results of on-site visits to and telephone interviews with representatives from five organizations that have implemented programs and policies to address various aspects of the labor and skill shortage problem. The organizations and program areas include:

The Alliance for Employee Growth and Development	*Skills Upgrading, Basic Skills, and Mobility Assistance*
The Highland Park Day Care Center	*On-Site Child Care*
Lancaster Labs, Inc.	*On-Site Child Care*
Motorola, Inc.	*Basic Skills*
Superior Technical Ceramics	*In-House Basic Skills*

Basic Skills and Upgrading Programs of the Alliance For Employee Growth and Development

The Alliance for Employee Growth and Development is a joint venture of AT&T, the Communications Workers of America, and the International Brotherhood of Electrical Workers. Established in 1986 as a joint labor-management program, the Alliance is dedicated to providing union represented AT&T employees with the skills and knowledge they need to successfully pursue their careers and personal development goals. In so doing, the Alliance provides another important benefit as well. It contributes to the competitiveness of AT&T by facilitating the development of a skilled and adaptable workforce.

Key to the success of Alliance programs are Local Committees. These committees, composed of labor and management representatives, are responsible for planning and implementing facility or workforce-specific programs. They serve as the focal point for local Alliance activities and ultimately create the foundation for active and collaborative human resources planning and development. As of September 1989, there were 450 Local Alliance Committees around the United States, enough to include every covered AT&T business unit, and 20 IBEW locals.

In fulfilling their responsibilities, Local Alliance Committees operate with the support of a National Headquarters Office and three Regional Offices. Alliance Headquarters administers program funds, establishes broad program and administrative policies, and with its Regional Offices, provides technical and managerial assistance to Local Committees and their programs. For the year ending in September, 1989, the Alliance administered a program budget of nearly $18 million, derived from an agreed upon contribution for each month worked by represented employees.

Since 1986, more than 35,000 employees, or roughly 25 percent of the eligible AT&T workforce, has participated in Alliance funded programs; additional Alliance sponsored services have been provided by external funding obtained by the Alliance. Alliance funded programs have ranged from personal planning topics such as relocation and financial planning to career-based training programs in critical occupational areas, and courses in computer literacy, basic skills, and qualifying exam preparation. More specifically, between 1986 and September 1989, workers received the following types of Alliance sponsored services.

Type of Service	Enrolled Workers
Needs Assessment Vocational and Interest Surveys	40,134
Career Assessment and Planning	20,354
Basic Skills Upgrading	783
Job Search Assistance	2,483
Occupational Skills Training	5,200
Personal Financial Planning	19,647

Type of Service	Enrolled Workers
(Pre-Paid) Tuition Assistance	2,981
Pre-Retirement Programs	816
Qualifying ExamPreparation Programs	1,456
Relocation Planning Workshop	341
Return-to-School Programs	970
Stress Management Programs	698
Other Personal Development Programs	459

Although the availability and nature of these programs depend on the unique needs of workers in individual business units, all Alliance programs share a number of important attributes. These attributes are what makes the Alliance itself a unique human resources development enterprise.

The first key attribute is the common vision of planned human resources development and change. Taken together, Alliance programs represent a large scale attempt by private industry and organized labor to help workers develop new skills and become more adaptable to change. With a substantial funding commitment, joint labor-management collaboration, and a network of active Local Committees, the Alliance is able to develop a number of strategic initiatives that range from occupational and skills upgrading, to basic skills development, to personal life skills enhancement. Because of its size and range of programs, the Alliance offers valuable lessons from which others interested in employee training can benefit.

Supporting this vision of planned change is the emphasis placed on individual empowerment over one's career. The Alliance recognizes that in a competitive, changing environment, employment security is a more practical and important objective than job security at a particular business, such as AT&T. Shifting business priorities, competitive cost pressures, and changing skills requirements create an environment where adaptability to change is valued highly. For some workers, this adaptability requires a transition from one AT&T job to another, while for other workers it may mean seeking employment opportunities elsewhere. By providing all eligible workers with the information, resources, and opportunities needed to anticipate change and make plans to address it, the Alliance believes that it can help workers take charge of their careers and achieve a greater degree of employment security.

Another important attribute is the emphasis placed on career planning. Partly reflecting its focus on "planned" employment security, the Alliance encourages Local Committees to include career planning services along with other programs that may be offered, such as skills upgrading. In addition, stand-alone career planning is also emphasized, and the Alliance offers remote career counseling through a toll-free telephone number when it is not feasible to provide it on the local level. This strong focus on career planning is intended to help workers establish and implement a realistic plan of skill development.

Most of the operational support for worker activities comes from the Local Alliance Committees. The dedicated and ongoing support that these Committees receive reflect the Alliance's strong belief that effective programs must be tailored to individual needs and based on a joint participatory planning process. This bottoms-up approach not only ensures responsive programs, but it also creates a

foundation for ongoing and proactive human resources planning at the business unit level. Thus, another common feature of Alliance programs is that Local Committees must exist for all facilities or workforces providing Alliance sponsored services.

A final common thread of Alliance programs is needs assessment. Consistent with its emphasis on planned change, Local Committees are expected to commence their activities with a needs assessment of worker interests in training and development programs. This survey-based approach provides each Committee with a wealth of valuable information that is used to determine program priorities and those factors that are critical to successful worker participation.

With over three years of experience providing training and development programs to active and laid-off workers, the Alliance has learned a great deal about how to best engage adults in a structured learning and development process. While this experience has contributed to effective programming, the Alliance still faces a set of evolving challenges similar to those faced by other joint and company sponsored training programs. These challenges include:

- How to vitalize and maintain collaborative human resources planning at the plant or business unit level that takes into account both individual development needs and company priorities.
- How to motivate adult workers to engage in career planning and participate in training and development programs.
- How to build program curricula that can accommodate varying levels of basic and technical skills among workers.
- How to leverage relationships with existing federal, state, and local resources.

This case study examines these and related issues by reviewing three different Alliance sponsored programs. These programs reflect a few of the strategic directions adopted by the Alliance and include the following:

Technician for Tomorrow Training Program

This is an upgrading program operated in the Chicago area and designed to provide trainees with the technical skills necessary to promote career growth in specific (AT&T) electronics and telecommunications fields.

English as a Second Language (ESL) Training

This program provides workers with basic skills in English so they can more productively perform their jobs and qualify for other opportunities at the Merrimack Valley Works facility located in Lawrence, Massachusetts.

Qualifying Exam Preparation Programs

These programs are designed to help workers pass company and industry based qualifying exams that are prerequisites for admission to selected training programs and occupations.

The Technician for Tomorrow Training Program

The Technician for Tomorrow Training Program is designed to provide Alliance eligible employees with the skills and competencies needed to prepare for a cluster of electronics related jobs such as digital testers and technicians. Part of the impetus for the program stemmed from the increasingly technical nature of AT&T jobs and the continued transition from analog to digital technology. The Program is targeted on workers in the Chicago area who display an interest in and an aptitude for these types of jobs, and who are willing to make a commitment to the program. In offering this program, the Alliance will help workers pursue new career opportunities and help the company meet emerging skill requirements.

The training program is provided by the DeVry Institute of Technology, a local for profit technical training school. Under a twelve month contract with the Alliance, DeVry provides training and related counseling and tutorial support in a number of related areas using an Alliance developed curriculum designed for self-paced adult learning. Training is offered at a site arranged for by the Alliance and is available to workers five days a week for up to four hours a day, including Saturdays. To accommodate the trainees' work schedules, program services are delivered between 4:30 and 8:30 PM during the week, and from 9:00 AM to 1:00 PM on Saturdays.

The decision to adopt a self-paced curriculum was intended to provide interested workers with a flexible approach that could address variations in their skill levels as well as competing demands for their time. The content of the curriculum is based on 21 separate modules or competency areas that range from Math Foundations Refresher, to AC and DC electronics, to Data Communications and Networks. Trainees progress from one module to the next at a self-determined pace after they have demonstrated competency in a given area.

The cost of providing this program for a twelve-month period is approximately $226,000. Of this amount, $151,000 covers the direct contract with DeVry, while the balance represents a direct Alliance cost for both space and equipment. Most of this represents long-term leasing arrangements and investments in equipment with a useful life well beyond the duration of the initial contract.

To participate in this upgrading program, all workers must enroll in another Alliance program--Career Planning--and develop a specific career plan. The purpose of career planning is to help workers make appropriate decisions about their career goals and understand the steps necessary to reach theses goals. To enroll in the Technician for Tomorrow Program, an individual's career plan must demonstrate an interest in and an aptitude for this type of training and related employment. In general, enrollment is not restricted on the basis of basic skills competency levels although those with very low skill levels are encouraged to enroll in a remediation program first.

Career planning services are provided by Operation ABLE, a local not-for-profit community organization that is tied to a national network. Under contract with the Alliance, Operation ABLE is responsible for providing four related services:

1. Assessment testing and counseling using a combination of interest inventories, aptitude batteries, and personality tests.

2. Individual counseling sessions to discuss career goals, barriers to achieving them, guidelines for tracking progress, and job opportunities within AT&T and in the local labor market.

3. The development of individual Career Action Plans (CAP).

4. Assistance with the implementation of CAPs.

In the Chicago area, approximately 4,000 workers are eligible for Alliance programs. The Alliance decided to start the Technician for Tomorrow Program as a pilot aimed initially at only a small fraction of that population, and promoted it accordingly. About 1,000 workers had participated in career planning and of these, 10 percent or 100 had career plans that showed an interest and aptitude in this type of training. These 100 were invited to apply for the program. Roughly 75 showed up for the initial orientation, of whom 65 ultimately decided to enroll. Currently, 48 workers or 74 percent of the initial enrollee group are still participating in the program.

Since the program's inception, the Alliance and its contractors have faced a number of important issues. One has been maintaining worker participation in the program. Despite the self-paced nature of the program's curriculum, the course work remains demanding and difficult for many workers. While most have enrolled in the program for economic reasons (e.g. employment security, career advancement, better wages), sustained participation requires a long-term dedicated effort. Moreover, the absence of any guaranteed wage increase or promotion places an additional strain on continued participation.

A related issue is the fact that program completers do not receive course credit from DeVry. While they do receive a Certificate of Completion that helps within AT&T, they cannot apply it towards any formal degree objectives they might have. The absence of formal course credit also limits the value of the program to other employers.

The Program's instructors as well as representatives from the Alliance both recognize this as an issue. They all believe that the effectiveness of the program could be enhanced if it included a stronger incentive to participate and achieve planned competency levels. At the same time, both parties recognize the challenges associated with moving the program towards accreditation within DeVry. For one thing, providing course credit would likely make the program less flexible and adjustable to the individual circumstances of the workers. This is especially problematic since many of the individuals enrolled in training have relatively limited basic skills. One of the prime features of the program is that it accepts trainees with a non-technical background. While the program's open-enrollment approach has the advantage of casting a wide net of opportunities for workers, it also has a clear set of implications with respect to the speed by which trainees can progress and the level of material they can reasonably be expected to absorb. Determining how to best balance these tradeoffs is an issue that both the Alliance and DeVry are currently addressing.

Other issues that have surfaced during the program include the need for selected curriculum improvements that stress more topical lectures, greater linkages between

instructional materials and job requirements, and closer tutorial assistance.

Overall, the Alliance has learned that there is no substitute for effective marketing, as well as company and union support. Developing and maintaining worker interest and support requires a dedicated labor-management effort. The Alliance has also recognized the feasibility of providing skills upgrading to workers with limited basic skills. While there are indeed improvements that the Alliance and DeVry plan to make, their experience to date has been very encouraging and can serve as a model for other AT&T business units where skills upgrading is needed.

English as a Second Language Training

Merrimack Valley Works is an AT&T manufacturing facility located in Lawrence, Massachusetts. The plant produces a variety of telecommunications and fiber optics components, and employs roughly 4,500 non-management workers. Most of these workers are not American born and over half (2,500 to 3,000) are employed in unskilled jobs. The remainder are grouped into semi-skilled and skilled positions, with the former group accounting for the majority.

In 1985, the plant decided to fund an English-as-a-Second-Language (ESL) program. The program was targeted on the large number of non-English speaking unskilled workers and was motivated by a growing concern over safety issues. With a large proportion of workers who could not read, write, or speak English functionally, the plant became less confident that these workers could understand safety rules and related operational procedures. As a result, a contract was signed with the Lawrence Private Industry Council who in turn subcontracted with the public schools to provide ESL training services.

Over the next three years, the company continued to support the ESL program, although state funds were used increasingly to finance it under a special Massachusetts industrial development program. By 1987, for example, the state financed 90 percent of the program's operating costs. By 1989, however, the state's share dropped to 50 percent and threatened to fall even farther the following year. While the program had demonstrated success, these cutbacks threatened its survival. To ensure continued operation and stable financial support, the Alliance fully funded the program beginning in 1989. The Private Industry Council is still the primary contractor, although community-based organizations and the area's Community College are also involved as service providers.

Under Alliance sponsorship, the ESL program today has broadened its scope and strengthened its relevance to workplace conditions. It has expanded its targeting to include workers that are functionally illiterate as well as literate in their own native languages. Relatedly, the program has also expanded its curriculum and focused on the development of functionally based instructional materials.

At the outset of the program, the Lawrence Public Schools relied upon a traditional instructional approach to teach basic skills. This strategy soon proved problematic since the course material had only limited links to tasks workers perform on the job. As a result, efforts were initiated, and still continue, to create a more functionally based ESL curriculum. Currently, the curriculum teaches basic skills by focusing on such work

related tasks and issues as the job posting process, policy directives, the plant's absentee control plan, and common departmental vocabulary.

The curriculum itself is divided into two basic parts, grouped by level of English proficiency according to a ten point scale. One group includes workers who have very limited basic skills in both English and their native language (Levels I to IV); the other group includes workers with somewhat higher skill levels (Levels V to X). On an operational basis, each of these two groups is further subdivided by skill level to create homogeneous learning environments. As with the Technicians for Tomorrow Program, the ESL program is self-paced.

Entrance into the program begins with a basic skills assessment that is used to facilitate the sorting process and establish individual goals. On the basis of test results and slot availability, workers are placed in the program. Those testing at Levels I to IV are serviced by a local community organization while the remainder receive instruction from the area community college. Progression from one level to the next is based on standard program competency tests.

The program operates for a 40 week period between September and June, and offers instruction for four hours a week. Half of this time is spent on basic academic skills and half is spent on vocational skills, such as communication. The workers and the company split the hours that are devoted to training (i.e., half on company time and half on the workers' time).

Participation in the ESL program is strictly voluntary. While consideration had been given to mandatory participation, the plant decided against it for two reasons. The first reason was projected cost. Mandatory participation would require an expansion of financial resources beyond that which could be afforded. The second reason was a concern over the legality, accuracy, and ethics of testing. For mandatory participation to work, the plant would have to test or otherwise screen prospective trainees to determine whether program enrollment was necessary. Because of uncertainty regarding test results and their use for selection purposes, including potential breaches of confidentiality, the plant concluded that any benefits of mandatory participation would be offset by the potential risks of the selection process.

Since program participation has remained voluntary, enrollment levels have been modest. Several factors contributed to this. Older workers have been much less motivated to participate in the program while transportation and day care needs have presented a problem for others. Additionally, not all workers have the motivation, interest, and ambition to pursue additional education. According to program and plant representatives, many workers are generally satisfied with the types of jobs they already hold.

However, those who did participate have demonstrated commitment to the program. Up to 75 percent of enrollees returned to take courses at higher levels for which they have qualified. This high level of continued participation reflects the long-term dedicated effort needed to make substantial gains in English proficiency.

There are many ways that the program and the Alliance have tried to strengthen support for the program and motivate workers to participate. One includes a focused attempt to build support among plant supervisors. While the program conducts its own marketing and is supported by an in-house liaison,

supervisors are also relied upon to inform workers of available program services and to help identify those who can benefit from participation. Moreover, since the weekly hours of participation are split between the plant and the worker, the supervisors must be willing to forego the lost output. Although they cannot deny participation per se, the lack of supervisor support can deter workers from enrolling in the program.

To address this, supervisors have received training and related materials to inform them of the program and its benefits and to help them determine which workers are likely candidates for participation. This has helped a great deal, although supervisor support remains an ongoing issue. Largely through the efforts of an in-house program liaison, supervisors receive ongoing attention and support throughout the year.

Counseling and related services are also provided to plant workers through an in-house Employment Resource Center. This Center is the hub of all Alliance related services and provides workers with counseling, career planning, and referral to other programs.

To date, the ESL program is viewed by both the plant and the Alliance as a success. It serves approximately 120 workers each year, has an attrition rate of roughly 25 percent, and a completion rate of 75 percent. Several hundred workers have upgraded their basic English skills, and many have chosen to participate in the program on a multi-year basis. While the program continues to face challenging issues, it has demonstrated the feasibility of upgrading the basic skills of workers with very limited abilities in both their native language and English.

Qualifying Exam Preparation Programs

Like many companies, AT&T requires employees to pass Qualifying Exams prior to admittance to certain training programs and job classifications. These tests are used to screen out employees who are believed to be deficient in the basic skills needed to succeed in these training programs and occupational areas. To afford more employees the opportunity to further their careers, and to help the company fill emerging occupational needs, the Alliance currently offers programs to help workers prepare for the qualifying exams.

A major impetus for this program was the low pass rate among several workers. In several locations where these exams were given without preparatory courses, only 20 percent of the candidates passed. After having the opportunity to take the test preparation programs, the pass rate has increased to about 75 percent. By providing this service to workers, the Alliance has contributed successfully to the upward mobility of its constituent workforce.

The Qualifying Exams most utilized by AT&T are the Business Telephone Battery (B-TAB) for clerical jobs, the Technical Telephone Ability Battery (T-TAB) for technical jobs, and the Customer Contact Telephone Ability Battery (CC-TAB) for jobs dealing with the public. To help workers pass these exams, the Alliance has used one major vendor, Bell Atlantic Educational Services. Currently, Local Alliance Committees have sponsored test preparation programs in nearly 150 locations.

The programs' curricula involve between 30 and 36 hours of instruction. During this time, enrollees receive instruction in test taking skills and help in brushing-up on skills they have not utilized regularly. While the program has not yet reached all workers interested in participating, it has served close to 2,000 workers. As mentioned above, those who participate have a pass rate of roughly 75 percent compared to 20 percent for non-participants. Although this is a short-term program, it has proved to be an effective vehicle for facilitating the mobility of workers within AT&T.

The Highland Park Day Care Center

Introduction

"Our role is to develop projects that are good for the business community which would not be undertaken by the private sector on its own."

This is the mission of the Woonsocket Industrial Development Corporation (WIDC), according to its Executive Director, Scott Gibbs. One of only three private not-for-profit development corporations in the state of Rhode Island, WIDC put itself on the national map in 1989 by constructing a day care center financed in part by local businesses.

This case study reviews how a consortium approach was used to finance and develop a local day care center situated at the foot of the Highland Industrial Park in Woonsocket. The case study is based on interviews with the WIDC Executive Director, representatives from the day care facility, and two of the corporate participants in the consortium: Consumer Value Stores (CVS) and Eastland Bank.

The center's story highlights the importance of three crucial ingredients in developing a day care facility through a consortium, including:

1. A catalyst who has the ear of the business community and who will see the project through;

2. Endorsements for the project from top management in participating corporations; and

3. The selection of providers who are respected within the local community.

In addition, it reveals the special ability of a not-for-profit corporation to provide affordable day care services to a wide range of workers from small as well as large businesses. But the case also highlights the limitations of programs developed by high-level strategists: in comparison to day care centers designed with heavy employee participation, the top-down model may be less sensitive to the particular needs of the area work force.

Woonsocket is located in northern Rhode Island, about half an hour's drive from Providence and an hour from Boston. The city's population is primarily of French-Canadian descent. There is little migration either into or out of Woonsocket and thus the ethnic community has taken on the feel of an extended family.

WIDC was incorporated in 1968 with not-for-profit status under section 501 (c) (4) of the Internal Revenue Code. Over the last two decades the corporation has become an integral part of the area's economic base, with its primary role being the development and management of two local industrial parks. WIDC has close ties to the Greater Woonsocket Chamber of Commerce, has an annual operating budget of $100,000, and supports a small professional staff. The 21-member board of WIDC is comprised of many leaders in the business community, including CEOs from the local banking, real estate, manufacturing, hospital, retail, and publishing industries.

Given the traditional, geographically stable nature of the population in Woonsocket, human resource problems were relatively minor until the mid-1980s. This was especially true for the larger, more attractive companies in the region. CVS, the expanding retail giant with 1800 stores in 14 states and headquartered in Woonsocket, has an outstanding reputation among local workers. According to its Personnel Manager, during the recession of the early 1980s, 100-150 workers would come off the streets looking for jobs at CVS each week. In her 13 years of service she has seen generations of Woonsocket residents working together at the company. It is a "unique world," where about 75 percent of the non-exempt (hourly) office and distribution center staff live within five miles of Woonsocket.

Up until a few years ago, CVS never had a problem recruiting or retaining staff in their corporate offices and distribution center. The company's superb reputation made recruitment straightforward at both the salaried and hourly levels. Then, however, the economic boom in New England started to have its effects on the local labor market. Employers in the fast-growing regional economy had to grapple with a growing labor shortage, in part fueled by the loss of workers to other local businesses who had lured them away. Even CVS started to have recruitment difficulties at the non-exempt level as it hired continuously to fuel steady growth.

For its part, CVS responded to the labor shortage by expanding programs which were consistent with its progressive personnel philosophy. A union-free corporation, CVS's human resource staff maintains an open-door policy with its employees. The corporation has become a major participant in the local adopt-a-school program, enhanced its educational assistance activities, and offers college credit evening classes on-site through the University of Rhode Island. The corporation recruits part-time workers from the local high school and taps into the area's vocational-technical school for secretarial and printing services to get special projects done. These programs have helped to form enduring bonds between CVS and the schools' incipient work force.

Eastland Bank, headquartered in Woonsocket, RI, has assets of approximately $1 billion and employs more than 500 people through its headquarters and 14 branch offices. Like CVS, the bank has begun to feel the recruitment pinch over the last several years. Eastland responded in a number of ways, including developing a training program for Southeast Asian immigrants in conjunction with the regional Private Industry Council and the International Institute of Rhode Island. The Institute is an organization based in Providence, RI, whose objective is to enable immigrants and refugees to become self-sufficient, productive members of society. The vocational ESL course was held in the bank, and resulted in the hiring of 7 of the 14 trainees. Besides gaining 7 employees, Eastland has benefited from the training by building stronger ties with the burgeoning Asian business community and labor force.

In large part, this program reflects the bank's willingness to participate in innovative efforts when warranted. For example, Eastland employs large numbers of part-time and female workers, and is open to exploring such possibilities as flextime and work sharing.

While both CVS and Eastland Bank have created dependent care programs, neither has done so in response to the expressed needs of its employees. The stability of the local work force tends to moderate labor

shortages and the economy has slackened in recent years -- relaxing the intense demand for workers. Even so, both companies have made proactive moves to develop child care benefits in an effort to anticipate and correct for potential problems in the future. For example, the Bank contracted at modest cost with Options for Working Parents, a child care resource referral agency associated with the Greater Providence Chamber of Commerce. Workers with child care needs can receive information and referral free of charge about licensed state-wide facilities through this service. Eastland has used its participation in this program as a marketing and recruitment tool, creating child care brochures and including information about the program in its want ads. For its part, CVS offers a pre-tax dependent care flexible spending account, and both companies participated in the Highland Park Day Care Center consortium.

An Innovative Consortium: The Highland Park Day Care Center

The Highland Park day care consortium is the brainchild of WIDC, working in conjunction with Woonsocket Head Start and Day Care (Head Start). Head Start is also a not-for-profit entity, incorporated under section 501 (c) (3) of the IRS code. Like many Head Start programs, the one in Woonsocket is well-respected within the community. It administers a number of programs, including preschool day care, after-school care, Head Start, ESL, and summer youth training. The agency has been in operation in Woonsocket for over 15 years, has an annual budget of approximately $800,000, and employs a paid staff of 60 as well as a number of volunteers.

The day care center opened its doors in January 1989 at a time when the greater Woonsocket area had only two full-day child care centers, neither of which offered infant or toddler care. In addition to center-based care, there are about 10 licensed family day care providers working out of their homes in Woonsocket as well as a large number of unlicensed providers. The center is a colorful, fanciful building built into the side of the hill leading up to the Highland Industrial Park. Included in the facility are multi-level infant, toddler, and preschool areas, a conference room, reception area, offices, a full-service kitchen, and a modern outdoor play area. The state has set a maximum of 88 slots for the Day Care Center.

The Highland Park Center serves several well-defined groups of parents. The first includes employees of corporate sponsors. For a per-slot fee of $2,000 per year for five years, businesses can reserve spaces in the center for their workers. The participating employees also pay a fee for use of the center, but the employer subsidy is a guarantee that the purchased spaces will be available for workers. For example, CVS signed a contract to reserve 20 slots in the center at $2,000 per slot per year, for a total cost of $200,000 over five years.

Businesses can expect to benefit from participation in the consortium in several ways, including recruitment and retention of valuable employees, and enhanced community and public relations. Especially for workers in the Industrial Park, the Center is a convenient location for day care, and employers' involvement reserves spots for their children in a center run by a respected provider. Also, the working parents benefit from day care prices that are about $20 per week below market rate for center-based care, made possible by the employers' subsidy.

If the number of employees who want to use the Center exceeds the number of slots bought by their company, the Center Director creates a waiting list. As space opens up, workers are offered slots on a first-come, first-served basis. Slots become available when a child is taken out of the Center voluntarily, or when a participating employee leaves the company. It is up to the corporate sponsor to decide how long the child of a former employee will be allowed to stay in the center while the parents find alternative care arrangements. For example, each month the day care Center Director gives the CVS Personnel Director a list of employees with children at the center. The Personnel Director cross checks the list against the names of all workers who have left the Company, identifies former employees who are using the Center's services, and asks those ex-workers to make alternative day care arrangements within a "reasonable" period of time (usually within two months).

In addition to serving employees of the corporate sponsors, Highland Park Day Care is designed to provide child care for low- and moderate-income working families. Twenty-four of the 88 slots are reserved for the children of families who meet U.S. Housing and Urban Development (HUD) income guidelines. The maximum qualifying income varies with family size. Currently, for example, a single parent with one child may earn almost $25,000 and still meet the guidelines. Overall 45 of the center's slots (or 51 percent of the total) must be filled with families that meet the HUD guidelines. Thus, in addition to the 24 low to moderate income slots, at least 21 of the 64 corporate slots must be filled with the children of HUD-qualified working parents.

Parents who wish to use the center complete a worksheet to determine whether they meet the HUD income guidelines. Some of those that do meet the guidelines have incomes sufficiently low that they also qualify for state child care subsidies, which the Center requires parents to apply for. The income cutoffs for a state subsidy are substantially lower than the HUD guidelines: while a family of two can make almost $25,000 under HUD, to qualify for a state subsidy requires an income of no more than $15,000. The subsidy is automatic as long as a family's income does not exceed the maximum allowed for those receiving state day care funds. The Center has had no problem filling these 24 low- to moderate-income slots.

In its original conception, the center was to be used solely by HUD-qualified families and by the employees of participating corporations. However, of the 64 slots marketed to corporate sponsors, only 30 have been contracted for after one year of operation. CVS has bought 20, Eastland Bank 5, and other businesses an additional 5. CVS has filled all 20 of its slots and keeps a waiting list, but of the remaining 10 purchased slots, there are 3 which have not been filled by workers from the participating corporations. As a stop-gap strategy to increase use of the center, a handful of market-rate slots have been created to serve the children of parents from the community who are unaffiliated with the participating corporations. It is hoped that over time more corporate participation will allow the Center to phase out these slots and reserve its services exclusively for its original target groups of income-eligible parents and corporate-sponsored employees.

As with other day care centers, rates vary depending upon the age of the child and the number of days of care. Part-week care is available, but part-day care is not. Fees include breakfast, lunch, and a snack, which provide two-thirds of the child's daily

nutritional requirements. Rates also vary depending on how the family qualified for the center's services. For full-week services, the corporate-sponsored workers pay $110 for infant care (6 weeks - 18 months old), $90 per week for toddler care (18 months - 3 years old), and $70 per week for pre-schoolers (3-5 years old). Cost varies with age because Rhode Island, like most states, requires a lower child/provider ratio for younger children than for older ones. These corporate rates are about $20 per week below the market prices paid by working parents unaffiliated with corporate sponsors.

If a family meets the HUD guidelines and qualifies for a State subsidy, the State guarantees the center $89 per week for full-time infant or toddler care, and $61 per week for pre-school care. The relevant State agency determines how much of this fee will be paid by the parent and how much by the State, with the parent paying as little as $2 per week. A large group of workers who qualify for State subsidies includes women who are former Aid to Families with Dependent Children (AFDC) recipients. Many of these women are in training programs administered by the Northern Rhode Island Private Industry Council (PIC), which is given priority for filling 10 of the 24 non-corporate slots. Once they complete training, the post-AFDC women qualify for Rhode Island child care subsidies for six months, no matter their income level. Unfortunately, many of these women find it difficult if not impossible to afford the Center's services once this six-month period of State subsidy expires.

The Center has developed a sliding scale of payments for parents who meet the HUD guidelines but do not qualify for a State subsidy. For a two-person family, this translates into an income level between $15,000 (State cutoff) and $25,000 (HUD cutoff). The minimum that these parents pay is $70 per week for infant/toddler care and $61 for pre-school care. Rates increase with income, but no one pays more than the corporate rate.

Center Management and Financing

The Highland Park Day Care center is owned by the WIDC, which has contracted with Head Start to administer the Day Care Center. In addition to teachers, Head Start employs a full-time Center Coordinator, who is supervised by the Executive Director of Woonsocket Head Start and Day Care. The lease between WIDC and Head Start is written so that Head Start collects the corporate funds at $2,000 per slot; these funds are then passed through to WIDC. The Development Corporation is not in the day care business and therefore did not want to be a partner in the operation, but only as a landlord. If 50 corporate slots (@ $2,000 per slot) were allocated the lease would generate $100,000 in income per year for WIDC. The corporate slot fees were designed to provide a market return to WIDC: with prime office space in Woonsocket renting for $13 per square foot and the center having approximately 7,700 square feet results in revenue of $100,000. ($13 x 7,700)

The construction phase of the project was financed through a mix of sources. WIDC owns the Highland Industrial Park and contributed Park buffer land valued at $200,000. The turnkey cost of the Center, including design, construction, and all furnishings was approximately $850,000, not including the value of the land or the time commitment of WIDC and Head Start staff. Two public grants, each for $100,000, were also solicited and approved: a

development grant from the State, and an equipment grant from the City of Woonsocket. Additional foundation funding totaled $50,000. The regional Private Industry Council donates $7,500 annually, and in return is guaranteed that 10 of the 24 income-eligible slots will be reserved for its clients.

The initial project budget is shown below. It was slightly modified during the implementation phase, but is in essence reflective of the actual financing package that was developed.

I. Construction Phase	(Dollars in Thousands)
Building Construction	$768
Architectural/Engineering/Construction Management	$ 55
Construction Financing Fee @ 10%	$ 13
Origination Fee -- 1% of $600,000	$ 6
Legal/Accounting	$ 5
Builders Risk Insurance	$ 10
TOTAL CONSTRUCTION COST	$857
Grants (State, City, foundations, PIC)	($257)
TOTAL COSTS TO BE FINANCED	**$600**

II. WIDC Annual Expenses during Post-Construction Phase	(Dollars in Thousands)
Mortgage -- $600,000, 20-year mortgage Fixed for 5 yrs. @ 10%	$70
Project Acounting/Bookkeeping	$ 2
Structural/Maintenance Reserve	$ 3
Insurance	$ 5
Payment-in-lieu of Local Property Taxes	$ 5
TOTAL ANNUAL WIDC (LANDLORD) POST-CONSTRUCTION COSTS.	**$85**

With 50 corporate slots sold (plus the $7,500 annual payment from the regional Private Industry Council), the project is designed to earn a $22,500 profit for WIDC, which would be passed back to Head Start to improve staff salaries. Currently, with 30 corporate slots sold, WIDC project revenue is $67,500, and the annual operating loss is thus $17,500.

The operational budget for Head Start and Day Care is listed below, and is financed through fees paid by parents and (for low-income families) the State.

III. Head Start Annual Operating Expenses for Highland Park Day Care	(Dollars in Thousands)
Personnel	$181
Salaried	$ 36
Fringe (20%)	
Supplies	
Food, excluding state subsidy for income qualified	$ 2
Other	$ 4
Utilities	$ 8
Repair/Maintenace	$ 2
Insurance	$12
Training/Substitutes	$ 4
Printing/Advertising/Travel	$ 2
TOTAL ANNUAL HEAD START OPERATING EXPENSES	**$251**

IV. Head Start (Projected) Operating Revenue from Highland Park Day Care	(Dollars in Thousands)
Infant Tuition $110 weekly x 52 weeks x 13 infants=	$ 74
Toddler Tuition $ 90 weekly x 52 weeks x 17 toddlers=	$ 80
Preschool $ 70 weekly x 52 x 44 preschoolers=	$160
Total Revenue with 50 corporate slots	$314
*** 80% OF TOTAL REVENUE**	**$251**

The 80% revenue estimate ($251k), which equals estimated operating expenses, accounts for vacancies during start-up, slots going unfilled for short periods of time as a result of turnover, and differentials between State subsidized rates and the facility's day care cost structure.

Issues in Project Development and Implementation

In the early 1980s, Woonsocket Head Start and Day Care had considered building a new day care facility, but was hesitant given the then-depressed condition of the regional economy. When the economy improved dramatically and CVS began to feel the labor shortage pinch, a high-level manager from the Company contacted WIDC's Executive Director, Scott Gibbs, and inquired about what the Development Corporation was doing about day care. Shortly thereafter, Gibbs began meeting with Head Start to develop a plan. WIDC was not interested in the project unless it served the needs of low- to moderate-income families because it was felt that the market was not providing reasonably priced services for workers at that level. Also, given its business orientation, WIDC wanted to launch a corporate-sponsored day care center -- thus the resulting mix of business and income-eligible slots.

WIDC and Head Start combined to make a formidable team. Together, the two institutions provided for three of the four critical ingredients for developing a successful day care consortium: 1. an established, respected, day care provider; 2. real estate expertise; and 3. a catalyst (WIDC) which could market the program to top corporate management and was willing to dedicate substantial time to developing the project and seeing it through to completion. The fourth piece of the puzzle was local corporate support at the highest levels which WIDC was in an ideal position to solicit. Working with personnel directors was viewed as a less efficient marketing strategy since human resource plans have to be approved by top management anyway.

WIDC began by contacting an architect to design a plan for the center which could be used to market the concept to business. The decision was made to construct a top-of-the-line, architecturally interesting building. This was consistent with WIDC's overall mission to pursue big-city development excellence within a small-town environment. Not too long after, CVS and Eastland agreed to purchase a number of slots for a five-year period. This period was chosen because the proposed mortgage costs were fixed for the initial five years and WIDC wanted predictable income and expenses during this pilot period. With all corporate contracts coming due in five years (January 1994), WIDC would have the option to sell or convert the property at that time if conditions warranted such a move. CVS respected Head Start and said that it would withdraw from the project if for some reason Head Start was not the service provider. Head Start also committed during the development stage to a five-year lease with WIDC.

With solid local corporate support in hand, WIDC was able to line up State and City grants with little delay. Luckily, the State economy was booming in 1987 and 1988 and the public fiscal situation was quite healthy. The State grant of $100,000 was appropriated through a customized bill designed specifically for the project. The terms of the grant are that at least 51 percent of the Center's slots will be used for low- to moderate-income families. The City's $100,000 came out of block grant funds. Since this is federal money, use of the funds for construction would require adherence to the union wage scale under the Davis-Bacon Act, and this would have increased development costs substantially. Thus, block grant funds were used to purchase equipment only.

With commitments from CVS, Eastland Bank, Head Start, the State, City, and foundations, WIDC approached four local financial institutions for financing. The $650,000 mortgage was attractive to local banks because it was supporting a project worth over $1,000,000 (including the value of the land). Through a competitive process, Eastland Bank was chosen to finance the facility as a result of its attractive interest rate and willingness to fix the rate for six months in advance. A condition of the loan was that WIDC have written contracts for at least 30 corporate day care slots over five years at $2,000 per slot. The capacity of the Center was determined by the size of the available plot of land, and through discussions with officials from the State regulatory apparatus. The space was originally licensed for 101 slots but later reduced to 88 following a second review of the architectural plans.

During the development stage, CVS and Eastland Bank conducted brief, informal surveys of their work forces to gauge interest in the Day Care Center. CVS identified 220 people who would be interested in the Center now or in the future. CVS viewed this response as a voice vote rather than a careful assessment of potential demand. Eastland's 21-question February 1987 survey was developed by WIDC and asked about family income, number of children, interest in various day care services at various prices, and problems related to day care needs. Of the 187 employees who returned the surveys, 33 who expressed some need for services.

When it came to actually obtaining corporate signatures on paper, WIDC found CVS and Eastland reluctant to commit to the number of slots which were initially discussed -- mostly because this was something new and actual demand was unknown. WIDC then negotiated with each company and finally CVS signed on for 20 slots and Eastland for 5. Five other corporate slots were purchased by local business leaders who had relationships with WIDC and were asked to support the program.

Support from manufacturers was not forthcoming, in part because second- and third-shift workers would not be served by a center open only during regular business hours. So with 30 corporate slots paid for and all of the pieces in place, the Center opened its doors in January 1989. The WIDC and Head Start Directors, as well as the Center Coordinator, all contributed up to 20 hours per week for almost two years during the final 18 months of development and construction of the project.

Assessment of the Woonsocket Day Care Consortium

In strict financial terms, the Day Care Consortium is not yet a complete success. One year following its opening, only 30 corporate slots have been purchased, leading to a $17,500 annual loss for the landlord, WIDC. Sixty-seven children are using the Center, many are part-week, and the operating revenue does not yet cover the operating expenses. State regulators have limited the number of slots in the Center. An expanded total capacity would allow Head Start to maintain its 84 corporate and income-eligible slots while drawing in more parents from the community to help balance the operating budget.

From the beginning, WIDC has argued that corporate day care cannot be looked at from a strict bottom-line standpoint. The benefits of lower turnover and enhanced recruitment are too difficult to measure and cannot take

the place of a company's overall perspective toward employee day care. From the outset, WIDC believed that a corporation is either progressive and innovative or it is not, and a few thousand dollars here or there will not necessarily make the difference as to whether a company will participate.

As an example of the lack of importance of the bottom line, WIDC noted that a CPA assessed the after-tax cost of the $2,000 per corporate slot to the participating businesses. Given Rhode Island's tax credit for corporate day care and the use of flexible benefit accounts, the accountant estimated the real after-tax cost of a day care slot as $1,000 -- a 50 percent discount. But WIDC maintains that this information did not affect corporate sponsorship one way or the other. Especially for medium and large-size businesses like CVS and Eastland, either you buy into the concept of corporate day care or you do not. Younger executives -- especially those with working spouses -- were most interested.

The Day Care Center is a visible accomplishment for the community that would not have been spawned without WIDC's unique role as a not-for-profit development corporation. Whether in the future WIDC owns the Center or it is sold to another corporation or provider is immaterial, as long as the resource is maintained in the community and is operated to serve the needs of local businesses and low- to moderate-income families. But from the standpoint of the participating companies, the day care center has offered an important benefit.

CVS has had much success with its 20 slots. The corporate headquarters are located in the Highland Industrial Park, and the center's convenient location has served the needs of its workers well. On opening day only 5 employees had enrolled their children in Highland Park Day Care, but all 20 slots were filled within seven months. After one year the Center was maintaining a growing waiting list for CVS. The enormous local press generated by the Center and CVS's participation in it caught the eye of a number of employees working in nearby CVS retail stores, and this has expanded the waiting list even further.

So far the equity issue has not surfaced at CVS, and use of the Center is equally distributed across hourly and salaried workers. But the Personnel Manager is concerned that workers will be unhappy if their children are maintained on the waiting list for a long period of time. Participation in the Center has brought only positive publicity and the parents using the facility have come back with rave reviews. WIDC is negotiating with CVS to buy an additional 20 slots which would accommodate those on the waiting list and put both WIDC and Head Start in the black. For CVS, the long-run issue is whether or not the Company is willing -- for equity reasons -- to provide an ample supply of day care slots at the Center. A related concern is whether participation in Highland Park will create equity problems nationwide, as CVS employees call for similar services in other locations. In other words, CVS must decide whether Highland Park is a pilot program or the beginning of a broad-scale corporate day care initiative.

Eastland Bank's 5 day care slots have filled more slowly; however, 15 months after the center's opening 4 children had been placed. The Human Resources Officer attributes the lack of an immediate response to the relatively high cost of care. Parents were simply astounded at the Center's rates. Some realize that the quality of care at Highland Park would be developmentally superior to that offered by a neighbor, friend, or relative at home, but they also pay

less for family day care. Despite efforts to talk to parents individually, to hold open houses at the Center, and to publicize the Center in the Bank newsletter, widespread interest simply was not immediately forthcoming.

The relatively small number of workers participating at Eastland may be in part attributed to the fact that the Bank is a 5-10 minute drive away from the Center. Also, the mix of workers and the availability of extended family networks may vary across the two companies. Additionally, Eastland's offices are more geographically diffuse, while CVS has a large concentration of workers near the Day Care Center. In sum, Eastland and some of its working parents have benefited from the Bank's involvement in the Highland Park Day Care Center, while the level of participation has been relatively modest. For CVS, participation, and possibly the overall benefits to the organization, have been greater.

Highland Park has increased the availability of top-quality day care in Woonsocket, especially for low- to medium-income families. CVS employees find it conveniently located and at a cost that is below the market rate for comparable center-based services in the area. However, the sticking point from the employees' perspective has been cost. Although reasonable, given its quality, area residents are not accustomed to spending $70-110 per child per week for day care. Clearly, not all of the working parents at either CVS or Eastland view Highland Park as a viable day care alternative for them, preferring instead the use of lower-cost relatives or neighbors. In this light, the consortium can be seen as a pilot program, one which established the idea of corporate-sponsored day care in Woonsocket. To reach out and fully meet the needs of its working parents, the participating corporations must come to view the Center not as an end to their involvement in the day care business, but rather as a beginning.

Dependent Care Benefits at Lancaster Labs Inc.

Introduction

"I believe our company represents the very best of American business, because we have shown that family values are quite compatible with good business practice."

This is the vision of Dr. Earl Hess, founder and President of Lancaster Labs Inc. (LLI) in Lancaster County, Pennsylvania. LLI is one of the nation's fastest growing and most respected independent testing companies, providing analytical services to a wide variety of industries. During the last half of the 1980s the company's annual growth rate averaged 35 percent. By the end of the fiscal year 1989 LLI, a company started as a family business in 1961, had expanded to over $16 million in sales and employment of 341 people.

LLI's personnel requirements range from relatively unskilled laboratory assistants to Ph.D. chemists, with approximately one-to-one ratio of those with degrees to those without degrees. Turnover averages about 15 percent per year and is concentrated among the less-skilled lab technicians who earn approximately $6 per hour, and among less-tenured workers in general. As a small high-growth company competing in markets with publicly held giants (such as those owned by Corning), part of LLI's comparative advantage is based on its ability to attract and retain employees. It offers extensive training, advancement, and entrepreneurial opportunities early in a worker's career, as well as a range of benefit programs and policies. Growth opportunities are reflected, for example, in an entry-level management training program and through a dual-career track that provides advancement along both managerial and technical job ladders.

A primary human resource goal for the company has been to provide a set of cultural amenities and professional opportunities that will retain and challenge the experienced employee. This goal has been directed particularly toward women employees since they account for significantly more than half of LLI's workforce and have significant representation as technicians, chemists, and managers (as well as in the more traditionally female occupations). In recognition of the opportunities for advancement and the company's sensitivity to women as well as family responsibilities, Working Mother magazine (October 1989) chose LLI as one of the 60 best companies for working mothers in the United States.

LLI's constantly evolving personnel policies now include drug testing, overtime pay for salaried employees in special circumstances, educational and counseling assistance, and the funding of a non-management employee advisory committee. Flexible spending accounts have also been established for both medical and dependent care expenses, with the resulting company savings in payroll taxes passed on to employees through increased financing of medical insurance.

LLI has also used summer programs for college students as a recruiting device, and now trains entry-level lab technicians at the

local vocational technical school. LLI chemists serve as instructors and use a company-developed curriculum. Those who successfully complete the courses are guaranteed a job. In order to retain and promote company-trained lab assistants, LLI is working with the community college to institute an associate's degree program in chemistry.

LLI's national recognition as a human resource innovator is tied closely to its establishment of an on-site child care center in 1986. In that year, the staff was 62 percent female and had an average age of 32 years. There was an intuitive feeling among the company leadership that something should be done in the dependent care area to address the needs of its workforce, and to ensure longer-term retention and skill development. Constantly changing technology in the laboratory industry makes it particularly difficult for women to re-enter the workforce after a long absence during their childbearing years. An on-site dependent care program would help address this by offering a convenient alternative to lengthy disruptions in one's tenure with the firm. However, at that time no company in Lancaster County had an on-site day care center. Upon the suggestion of his Vice-President for Human Resources, President Hess decided to move forward with the center.

This case study reviews the structure of the dependent care program at Lancaster Labs and then discusses key development and implementation issues. The center is owned by LLI and leased to a professional day care provider. In return for lower rent and maintenance subsidies from LLI, the provider offers services to the company's working parents at day care rates that are approximately 20 percent below market prices. As the leasee, the provider has also freed the company of any significant liability exposure or day-to-day operational responsibilities. In addition the high-quality, center-based care has given LLI a significant boost in recruitment, retention of valued employees, and positive industry, community, and even national publicity. It has also demonstrated that it is feasible for a small business to address dependent care needs through what is usually perceived as a risky and expensive solution often reserved for larger firms.

Dependent Care Benefits at Lancaster Labs

The establishment of the day care center at LLI was driven by a commitment to family values, with the central business purpose being the recruitment and retention of working women in their childbearing years. The on-site day care center at LLI is adjacent to the work site, accommodates 112 full-time day care slots within its main building, and has a separate outdoor pavilion and play areas. Since the Lab is currently housed in a single large structure, the day care center is a visibly important development on the work site, independent but just next to the Lab itself.

In public, non-profit day care centers, it is illegal to deny access to anyone. Thus, one advantage of a private, for-profit center is that slots can be reserved explicitly for company employees. At LLI, pregnant employees who anticipate a demand for the center notify the company liaison, who then contacts the center director. Although the center is open to the public, placing LLI employees is its first priority. So far, there has been room for all who want a space within two weeks. It has been possible to find slots for the company's children rapidly because after a year and a half the center is filled to only two-thirds of its full-day,

full-week capacity. In part, the extra space was planned for, as LLI wanted the center to be able to accommodate its future growth. The long-term goal of LLI is to have the center completely filled with the children of its own personnel.

The operator of the day care center is Magic Years Childcare and Learning Centers, Inc., one of the nation's first companies specializing in employer-provided day care. Magic Years leases the space from LLI, which owns the building. The center director has some control over operations but the basic policies and curriculum are set centrally by Magic Years. Hours are from 6:30 a.m. to 6:00 p.m. Monday through Friday. The center provides breakfast, lunch, and a snack. Summer day camps are available for school-age children, with pick-up and return at the work site. The Magic Year's on-site director is prepared to offer after-school programs during the academic year but so far -- given the relatively young average age of the company's workforce -- there has been little demand for this service.

Children are required to attend at least two full days or three half days per week and half day attendance is only allowed for preschool children, not for infants and toddlers. The regular full-day tuition rates are based upon a 10 hour day, with additional charges of $5 for all or part of the eleventh hour, and $10 for additional time after that. Parents are strongly encouraged to pick their children up by the 6:00 p.m. closing time and are subject to a $2.00 per minute charge for additional care past 6:00 p.m.

Out of the 90 children currently using the center, about 50 are the sons and daughters of LLI employees. The company has not kept track of the fraction of parents who use the center, nor has it attempted to assess formally the impact of the center on recruitment, turnover, and retention. However, there are some indications that the child care center is viewed by employees as a key benefit.

Within three months of announcing the plans for the center in 1986, 12 employees were pregnant. Of the approximately 30-40 mothers who have given birth since the center opened, virtually all have returned to work at LLI. It is the sense of the human resource staff that most of the parents who are not using the center have access to relatives who provide in-home child care.

By leasing to a professional service provider which provides a full-time, on-site director, LLI has avoided any significant managerial and administrative duties. Magic Years takes full responsibility for complying with the detailed child care regulations set by the Pennsylvania Departments of Education and Welfare. Center employees report to the director, not to LLI, but the company must give approval to any substantive change in center operations. All collection of fees is handled by Magic Years, which contracts directly with the employees. Apart from negotiating the annual lease with Magic Years, the only administrative expense for LLI is approximately two hours per month of the time of the company's human resource coordinator. Most of this time is spent planning "fun activities" such as having the children trick or treat through the company offices.

The liability of LLI is limited by requiring Magic Years to carry at least $1 million of insurance for injury to one person or for one occurrence. Magic Years is contracted to indemnify and hold harmless LLI from "any and all claims, demands, suits, or expenses including reasonable attorneys' fees, that relate to or in any manner arise out of the services to be performed under this

contract." According to the Labs lawyers, the only liability that it has is against the kind of accident that could occur anywhere on its property, such as a visitor slipping and falling on the sidewalk. Presumably, Magic Years, which operates a number of day care centers, purchases liability insurance under an umbrella policy at considerable per slot savings which is then passed on to the parents using the center.

The ongoing expenses to the company for operating the center are minimal. According to the Vice-President and Director of Human Resources, the total cost of development and construction of the center was $300,000; the lease with Magic Years provides a return on that investment which is "good" but below the market rate by 1-2 percent. Another initial cost was the administrative time dedicated to the development of the center, estimated at approximately 100 hours. Further subsidy comes from water, sewer, building, grounds, and maintenance expenses, paid for by LLI and estimated at $5 to $6 thousand per year, as well as ongoing administrative time of approximately 2-4 hours per month.

LLI guarantees that the equivalent of 20 full-time day care slots will be used by its employees and will pay for the cost of these slots if they are not filled. However, in practice LLI has not had to pay these slot costs, since the center has been in heavy demand by its employees. By the end of 1989, about 50 of the center's 90 children were company employees and the facility was operating at about two-thirds of its full-day, full-week capacity.

In total, the ongoing subsidy of the program by LLI is limited to providing a lease with Magic Years that is 1-2 percent below market rate and through ongoing maintenance, sewer, and water expenses. This subsidy is passed on to company employees through day care rates that are approximately 20 percent below those for community parents using the center. Since market rates in the county are low by national standards to begin with, this means that LLI can offer premium center-based services at extremely attractive rates to its employees.

LLI employees working at least 20 hours per week may finance up to $5,000 of their day care expenditures with pre-tax dollars through deductions into a company-administered flexible spending account. This reduces the federal income tax burden to the employee as well as the FICA (social security payroll tax) burden for both the employee and the employer. Since LLI administers the flexible accounts, turnaround time for reimbursements is minimal. At 1990 rates, the expenses of one infant in full-time day care for 50 weeks ($3,900) are fully payable using pre-tax dollars, whereas the expenses of one infant and one toddler ($6,450) are 78 percent payable in pre-tax dollars. While the costs of care are determined by the number of days which children attend, parents must indicate dates of attendance for the week no later than the previous Friday. Thus, planned absences are not paid for, but unexpected illnesses are paid for. If the parents plan five consecutive days of vacation for their child they must pay for one day of service for each five days of absence.

The rates which Magic Years charges parents are negotiated with LLI every year and are approximately 20 percent lower for LLI employees than for members of the community at large. These discounts are offered by Magic Years in return for the below-market lease and maintenance services provided by LLI. There is an additional 25 percent discount for the second and subsequent child from each family enrolled in the center, with the higher

rate applying to the most expensive form of care. In other words, a parent with an infant and a toddler would pay for the more expensive infant care at the regular LLI rate and receive the toddler care at a rate which is about 35 percent below that for an LLI employee with a single toddler enrolled in the center. The state of Pennsylvania sets maximum caregiver to child ratios as 1:4 for infants, 1:5 for toddlers, and 1:10 for preschool and kindergarten students. Fees are set accordingly, with the highest fees for infants. The community rates are set to be competitive with other area providers and vary according to the number of days enrolled. For example, full-time infant care is $94 per week for the community and $78 per week for LLI employees, whereas the three-day rate for toddlers is $60 per week for the community and $53 per week for LLI employees. As an added bonus, diapers are provided without additional charge for the LLI children.

Development, Implementation, and Expansion

The sophisticated stand-alone child care center now in place at LLI represents the outcome of an evolving process of experimentation and expansion. The original center was a 29-child facility which made use of modified space in the Lab building. Following a building expansion in the winter of 1985-86, top management looked at the floor plans and realized there was room to install a child care facility. The tentative decision in the winter of 1986 to open the original center was made with virtually no hard data on anticipated demand or expected benefits. Top management had been playing with the idea for awhile and the building expansion provided the necessary space. LLI contracted with a local couple who were early childhood development specialists to implement the on-site day care program.

This original provider was paid an up-front management fee of "around $2,000", according to the company's Human Resource Coordinator, in order to conduct and analyze an employee needs assessment, to provide for licensing, inspection, and code certification of the space, and to give LLI a list of needed equipment such as cribs and toys. The space required some refurbishing, such as new carpeting and paint. LLI estimates the development cost of the 29-slot center as less than $5,000, including the time of the Coordinator, licensing costs, purchased equipment, and remodeling.

The needs assessment was administered after the tentative decision had been made to establish the center in order to plan the implementation process. Questions were asked about workers' jobs, children, family plans, problems related to child care, and impact of child care arrangements on absenteeism and future work plans. In total, 131 employees were given the survey in January 1986, with the service providers achieving a 79 percent response rate. Twenty-one children were identified whose parents would prefer or would consider on-site care (75 percent of the children under age 12). Among parents, cost was less of a concern than scheduling and convenience. Parents estimated that, on average, during the past six months they had missed 1.5 full work days and 4 partial work days due to child care. One-fourth of the respondents were planning on having children within the next five years.

Many workers, including those without dependent children, expressed a willingness to donate furniture or toys and to help renovate the day care space. Volunteers

worked on the center part-time for about a week, with about 6-10 persons participating. In-house maintenance staff did most of the renovations under the advisement of the outside providers.

The Human Resource Coordinator was meeting regularly at this time with other members of the employee benefits committee of the local Chamber of Commerce. Other committee members thought that the center was likely to be a mistake -- in any case, nobody wanted to be the first in the community to provide on-site care. At first, the concerns of area employers seemed warranted. LLI had guaranteed payment on 12 of the centers 29 slots and on the day the center opened, in August 1986, there were only 3 children signed up. One of these was the child of the Vice-President and Director of Human Resources who's personal involvement in the Center helped to promote the program. Besides word of mouth, employees were made aware of the program through the company newsletter and paycheck flyers.

Over the next six months, demand for the center's services grew steadily and other area employers became more enthusiastic and interested in the experiment. Since the center had no regular director, the Human Resource Coordinator was spending 8 to 10 hours per month helping to manage the child care program: some of this time the coordinator believed, resulted from the lack of business background of the initial vendor. The problem was not that the care was inadequate, in fact it was received favorably by the participating parents. But LLI believed that the vendor's lack of business experience was showing up in a poor budgeting process, lack of concrete information on costs and revenues, and the significant amount of LLI staff time that was required to help manage the center.

At a seminar on child care during the spring of 1987, the Human Resource Coordinator met a local Magic Years director and was attracted to the company's approach to providing day care services to business. Magic Years was asked to give a presentation at the Labs which prompted LLI to change providers. The initial vendor made the decision to terminate the relationship with LLI promptly and with little advance notice, Magic Years was able to take over the management of the 29-slot operation. The new vendor saw the potential for expansion at LLI and was willing to devote a director to the center at a little less than one-half time.

The decision to develop the new 112-slot facility was made based on both the needs assessment's projection of the future family plans of employees and as a consequence of the rapid growth of the company. Since the original space being used for the center was needed for Lab expansion, LLI worked with Magic Years to develop a new facility. Magic Years was able to provide plans for centers of various sizes which met state regulations and provided advice throughout the planning and building process. The local zoning board gave a special exemption to allow the center to be built on land that was zoned residential.

The new 6,500 square foot facility opened in the summer of 1988. The state of Pennsylvania requires that all child care centers with more than 50 slots be staffed by a full-time director. The presence of this director, provided by Magic Years, virtually eliminated the need for day-to-day management or oversight of the center by LLI personnel. The yearly negotiation of the contract has been focused upon the rates to be paid by community members and LLI personnel for day care services. Other than that, the center seems to be running itself.

Assessment of the Child Care Experiment at Lancaster Labs

Dr. Earl Hess and Lancaster Labs have demonstrated that it is possible for a small business to develop an on-site day care center which has minimal company subsidy and no explicit government subsidy, but which costs on average only about $1 per hour for employees to use, payable in pre-tax dollars. Working parents praise the center's convenient on-site location as well as the quality and affordability of the care. The company provided the initial financing and is receiving a fair return on its investment. It incurs ongoing expenses of a few thousand dollars per year, mostly for maintenance, water, and sewer charges.

The benefits to the company have gone well beyond the original, narrow goal of retaining working mothers at the Labs. Many working fathers utilize the center and find it to be a valuable employee benefit. As a public relations and recruitment tool, the child care center has been an enormous boon. Lancaster Labs now has a national reputation in its field as an innovative, caring employer. The human resource staff reports that applicants ranging in age from their teens to their fifties have cited the center as a symbol of the company's commitment to the well-being of its workforce.

As the company grows and its work force ages, LLI may be faced with a new set of day care challenges. It is envisioned that over time more of the center's slots will be filled by Lab employees. Since these working parents pay less for day care than those in the community at large, the per-slot revenue of the center will drop. It is possible that the vendor will have difficulty providing discount services to Lab employees when community parents are no longer using the center and paying full price. On the other hand, as the center's toddler and preschool rooms fill to capacity the per child cost of care is reduced and some of these savings could be passed on to LLI employees.

Another challenge in the future will be providing affordable care as the average size of LLI families grows. Many parents are now planning for their second child, and for them day care costs will increase. At current daycare center prices, lower-paid workers may find it uneconomical to continue working at the Labs. The human resource staff is aware of the problem and is considering whether or not further subsidy for two-child families is advisable.

A clear lesson from LLI is that selecting the right provider is crucial. A good provider should not only be experienced in delivering quality day care, but also must know local regulatory requirements and be able to provide professional services to business. With a professional provider, a day care center can virtually manage itself.

A second lesson is that there are spillover benefits of being an innovator. Part of the success of the child care center at LLI is that it was the first in Lancaster County. Only one company can be first and being first has helped establish the Labs' exceptionally positive human resource management reputation in the local community, in its industry, and even in the national press.

Dr. Hess serves on the Board of Directors of the U.S. Chamber of Commerce and in this leadership position he has spread the word to other employers that doing what is right is also good business. He admits that the message is not easy for many of his colleagues to hear and that some local business leaders have even chided him for

raising worker expectations of what being a good employer means. But Hess is pressing on with his innovative plans. His new dreams are on-site elder care and fitness centers, tentatively planned to open in 1991 and 1992, respectively. The basic idea with the elder care center is that the children and parents of employees would spend at least part of the day with each other and that the elders' center would be adjacent to, or part of, the child care center.

The elder care center will not be built unless Lab management perceive it to be good for the health and viability of the business. Like the child care center "... this won't be a giveaway, either" says the Human Resources Vice President. She plans to work with local employers and senior agencies to assess the extent of potential community demand for the center's services. Some local employers are no doubt skeptical about the viability of on-site elder care. Then again, while some of those same employers raised an eyebrow when Earl Hess opened up his child care center, a few are now opening similar centers of their own.

Basic Skills Training at Motorola Inc.

Introduction

Even within the Fortune 500 companies, basic skills training is a relatively new game and the players have had to learn much along the way. Motorola Inc., the electronics giant with over $9.6 billion in annual sales and over 100,000 employees is a case in point.[1] The company's entry into the basic skills business was "through the back door" according to Susan Hooker of Motorola University (the corporation's education and training center), developing out of a broader commitment to product quality.

While Motorola's emphasis on investments in quality and basic skills training are fueled by corporate-wide philosophy and policies, management has a strong belief in the benefits of decentralization. Each sector, division, and group at Motorola has a great deal of autonomy; as a result, specific training initiatives vary significantly across the corporate lines of business. Basic skills training at Motorola has thus developed through the interaction of plant-level experiments, policies in each division, and corporate initiatives.

This case study begins with the corporate training policy at Motorola and then proceeds to discuss the basic skills programs that were developed within a particular sector (Communications Sector) of Motorola and a plant operating in a division within that sector (the Fixed Products Division plant in Schaumburg, Illinois). The Motorola experience highlights the benefits of developing basic skills programs from the bottom up, not from the top down. The initial efforts were established in a single factory and have since expanded with corporate support and encouragement into many of the other factories and lines of business at Motorola.

The Motorola experience also demonstrates that even large corporations have had to essentially start from scratch in developing basic skills programs. Community colleges and public school systems are just now beginning to tailor adult education curricula for on-site, company-funded training, and the corporations themselves have little in-house expertise in this area. Fortunately, companies like Motorola have paved the way for others and the United States is slowly developing a set of institutions that support workplace basic skills. Even so, the Motorola case reveals that basic skills programs are more complicated to develop than one might think, and require careful planning, development, and implementation.

Corporate-wide Policies at Motorola

Two new initiatives at the corporate level support and reinforce the basic skills efforts in each Motorola sector, division, and plant. The first is a peer review process, whereby training managers will visit each other's basic skills programs and share information. This internal evaluation approach, used earlier in assessing quality improvement programs, was a key reason why Motorola

received the first Malcolm Baldridge National Quality Award for manufacturing in 1988. As the primary stakeholders in the delivery system learn from each other, it is hoped that these visits will lead to the adoption of "best-in-class" basic skills training programs on a case-by-case basis. Second, beginning in 1990 corporate policy will require a minimum of 5 days of job-related training per year for each Motorola employee. To support this relatively strong commitment to employee development, since 1984 policy requires that at least 1.5 percent of payroll is devoted to training.

The basic skills objectives being established at Motorola are also reflected in the company's use of a Basic Abilities Testing Battery, or BATB. Beginning in 1990, all applicants for direct labor positions are given this validated, job-related test, which focuses on screening prospective workers for minimum job-related competencies in reading, math (decimals, fractions, and percentiles, which are prerequisites for statistical process control), visual acuity, forms completion, and simulated work situations. Some sites also administer situational structured interviews and a one-hour assessment center to selected applicants.

As a result of this testing program, virtually all new hires at Motorola are proficient in basic skills. Recruiters are working aggressively to seek out applicants with solid academic backgrounds with the goal being to have all new hires score at job-level competencies on the BATB test, subject to the broad parameters of the company's affirmative action plan. It is therefore the longer-service workers within the corporation, not its future recruits, that present the basic skills challenge.

The Motorola training and education strategic plan for 1990-94 has as one of its goals that by 1995 basic skills for the entire company workforce will be at a level where all can be trained and retrained throughout their working lives. So far, 40 different delivery systems have been established or projected for basic skills programs. It is estimated that by 1995 the company will have spent $35 million on basic literacy. Following extensive experimentation with voluntary participation on 50 percent company time, many of the company's divisions are now moving toward mandated basic skills training on 100 percent company time.

How Motorola Got Into the Basic Skills Business

Basic skills programs at Motorola developed out of business necessity, from a need for improved product quality. Like many U.S. companies, Motorola's historic advantage has been in design engineering, not low-cost, error-free manufacturing. But in competing with the Japanese, who are experts at producing in volume at high quality, the corporation has been forced to increase its quality initiatives. Nowhere has this been more true than in the development of the cellular subscriber division where basic skills training got its start at Motorola.

The corporation, in collaboration with AT&T, created the original cellular phone technology and by 1981 had invested $100 million in this development effort. In 1984 Motorola began manufacturing phones, but because the Federal Communications Commission was swamped with thousands of licensing applications and the granting of the first licenses was delayed for 18 months. That, in turn, brought sales almost to a halt. During that 18-month window the Japanese

developed a product that, while it had fewer features than Motorola's, was virtually defect-free.

Motorola's competitive position was worsened by Japanese dumping and by high costs of production within its own facility in Illinois. By the end of 1985 the decision was made to move all production to the far east. The general manager in Illinois argued strenuously against the move. His proposal for a one and one-half year trial period was accepted, during which time he would attempt to increase productivity and quality sufficiently in order to forego the closing of the U.S. facility. The approach of the cellular division was to implement on a broad scale technical system changes and social system changes that had been tried, to a greater or lesser degree, within other Motorola facilities.

The technical changes began with a redesign of the cellular phone, emphasizing a reduction in the number of parts. The plant also moved to just-in-time inventory and full implementation of statistical process control procedures. Measurement systems were upgraded and the large number of job grades were reduced to a single job grade. In addition, the factory was redesigned to encourage teamwork; inspectors were eliminated as each worker took responsibility for self-inspection, and the problem of over-engineering, common to U.S. manufacturing, was also addressed. The social system changes were: product design which included manufacturing personnel (to ensure "manufacturability"), a move toward flexible jobs and workers, early involvement of suppliers in the development process, and a commitment to error-free quality as opposed to simple productivity.

Managers within the cellular division and on the human resource staff believed that a key to the success of these changes was upgrading the skills of the hourly workforce. However, in no way was this a scientific assessment based on quantitative data. Rather, it was simply clear to those involved that the new emphasis on technology, team communication, and cross-training (where all members of a team learn all of the relevant jobs) would require a more educated, flexible worker.

To provide motivation for workers to develop their skills, a skill certification system was established. Within the single job grade, wages were established based upon certification points plus merit pay. Certification points were earned by performing a job for 40 hours defect-free. Much of the skill training was delivered on-the-job, but it became increasingly evident that at least some of the workers did not have the basic skills needed to complete job-related skill training.

The basic skills program within the cellular plant was developed in a virtual vacuum of information about worker competencies and needs. It was management's sense that the initial need was for mathematics. However, like many companies, Motorola had foregone workplace testing in the 1970s and early 1980s following a discrimination lawsuit. Therefore, there was no clear sense of what worker competencies in fact were.

To select the first employees for the start up of a new manufacturing line, the Cellular Division attempted to assess the skill levels of current workers to be sure they could learn basic statistical process control techniques. Initially, of 180 assessed, only 15 were able to demonstrate the desired skill level. Forty others volunteered to attend an on-site mathematics class which was established through a local community college. That program was run fifty percent on company time, six hours per week for

four weeks. But even after completing the course, only about 40 percent of the trainees were able to demonstrate the required skill level for learning SPC techniques. Clearly something was very wrong.

Nearby Harper Community College in Palatine, Illinois, was called in to develop further the cellular basic skills program. The experts at Harper realized quickly that worker difficulty with the word problems used in the assessment process were in large part due to low levels of reading competency. Harper began offering English as a Second Language (ESL), reading, and math courses at the plant.

The systematic changes put in place in the cellular division were a tremendous success. The factory remained in Illinois. Cycle time (the time it takes to convert piece parts into finished product) was decreased by a factor of 40 and the productivity of the line with upgraded personnel was five times what the original industrial engineering estimates predicted based on technical changes in the line alone. As a result of the successes in cellular, other Motorola business units became interested in the innovations put in place there.

The success in the cellular division was seen in product quality and the bottom line; however, there was no effort to evaluate the specific role played by the basic skills program. Nonetheless, as the story of the success was told to other managers, much emphasis was put on the critical contribution played by basic skills development. In consequence, by the end of 1989 every one of Motorola's U.S. factories had developed a basic skills upgrade program, mostly in consort with community colleges. Given the belief in decentralization, there has been no corporate effort to develop a model program and differences remain as to whether the training is voluntary or mandatory, and whether it is on 50 percent or 100 percent company time.

Basic Skills Training: Motorola Communications Sector, Fixed Products Division Plant In Shaumburg, Illinois

With this overview of basic skills training at Motorola, we now discuss the program that was implemented within a specific plant: the Fixed Products Division plant in Schaumburg, Illinois. The purpose of the basic skills program within this plant in Schaumburg is to lift all line workers up to a level of basic skills competency which will allow them to meet the job requirements. The plant's work force includes many immigrants who do not speak English and many of the longer-service workers who are not high school graduates. The program emphasizes English, math, and reading competencies which are geared to the job-related standards. Since virtually all new hires at Motorola will have met these standards, the emphasis of the basic skill's initiative in the plant is on the incumbent worker population.

Like the cellular division, the plant manager and training specialist in Schaumburg chose Harper Community College as its local service provider. Harper is down the street from the Schaumburg facility and is a national leader in adult basic education.[2] The college was chosen based on its reputation and the positive experience reported by other Motorola plants.

At the College, the Chair of Adult Educational Development notes that the Harper program used in Shaumburg is more flexible than most. Harper is able to offer

courses on a variable credit basis, with 15 classroom hours per credit. Each course cycle can therefore be as short as twice a week, fifty minutes per class, for eight weeks. Short cycles allow for the flexible reallocation of instructors and students as needed. On a per-student cost basis, classes are only economical if they include at least 15 persons at approximately $1.50 per student per instructional hour. Harper is willing to offer smaller classes to Motorola, but only if the company agrees to pay the minimum 15-student cost.

Harper uses the classroom model of instruction mostly because it is economical -- the College must serve a district that includes some 6,000 businesses and, therefore, one-on-one instruction is simply not feasible. As with most providers, Harper is still learning what it means to provide job-related training based on job-related reading, math, and writing tasks. Mostly, the College uses its standard adult basic education curriculum, but has been sensitive to where that fits in with Motorola's training goals. For example, the Motorola Statistical Process Control training course requires the competencies established in Harper's first two math courses, so these are the courses offered. Once these basic competencies are developed, workers are ready to take the Motorola basic skills test and move into more advanced, company-provided training.

The logistical requirements of offering on-site training programs at Motorola were such that a dedicated staff member was necessary just to serve this one company's training demand. The College has been very supportive of the liaison concept developed by Motorola, whereby a staff member is paid for by the company to create and administer educational programs on-site. This bridge person is in the best position to develop job-related (functional context) curricula. The goal at the Schaumburg plant is the creation of a complete literacy task analysis combined with a job task analysis in order to develop a customized basic skills program for the plant's workforce.

Reflective of the emphasis placed upon skill development by one of the managers, a full-time trainer was hired to coordinate factory skill upgrades. With the support of a grant from the state of Illinois, the trainer implemented a number of programs to improve off-line skill upgrading. A grant from the local Private Industry Council (PIC) was also critical in establishing the basic skills program. "It is highly unlikely that the Manufacturing Manager would have paid for the initial experiment in basic skills out of her own budget," notes the Training Manager. "But once seeing the benefits, she has now taken over the funding of the program."

One of the trainer's first tasks was to convince workers to sign up for basic skills training on a voluntary basis. She spent three weeks going from one worker to the next within the plant, talking to them about the program. On average, workers enrolling in training have spent 160 hours in basic skills so far, with 50 percent of the training time paid for by Motorola. The estimated cost to the company in 1989 for basic skills training in the Schaumburg plant was $375 per person, excluding student salaries. With 400 people projected to be enrolled in training on company time, the trainer estimated the budgeted 1990 cost of basic skills in this operation to be $600,000.

Development and Refinement of the Basic Skills Program in Schaumburg

The Schaumburg plant is part of the Communications Sector at Motorola, a large business accounting for over $3 billion in sales and over 50 percent of total company operating profits in 1988.[3] Following up on its positive experience with basic skills in Schaumburg and other locations, in the second quarter of 1987 the entire Communications Sector implemented a systematic program of voluntary basic skills assessment and training called "New Directions." The program was launched with a general article describing the changes coming in manufacturing. The next part of the communication to employees was an 18-minute videotape introducing the Chairman of the Board (and son of the founder) at Motorola, Bob Galvin. The video included examples of the actual changes that were taking place throughout the Sector, followed by a presentation by the Manufacturing Manager (who discussed the specific changes for their own organization). The goal was to get basic skills programs up and running in all plants and to increase recruitment into existing courses like those in Schaumburg.

In his message, Galvin had several objectives. The first was to stress the need that all workers have for lifelong learning. A favorite Motorola metaphor compares workplace training to going up a down escalator. Galvin stressed to his workers that skill requirements are going up while the adequacy of existing skills is declining. Walking up the escalator through lifelong training is needed just to keep from falling back down again. Galvin's second goal was to reassure long-time employees that they were still valued members of the team and there were no plans to let them go. This message was especially critical at Motorola, where all employees join the "service club" after 10 years.

The service club at Motorola has been a de facto guarantee of lifetime employment -- before a manager can lay off a member of the club, he or she must do everything possible to retain that worker, and any layoff requires the signature of the Chairman of the Board. So by restating his commitment to these long-tenure workers, Galvin was attempting to lower the level of anxiety surrounding entry into basic skills education.

For two years, ESL, math, and reading classes have been provided in-house at a number of facilities in the Communications Sector (including Schaumburg) by local educational providers. The program was promoted through meetings with supervisors and managers, and dissemination of a New Directions brochure and pretest. The brochure, entitled "Preparing for New Directions," stresses that production operators will increasingly have to be able to:

- Read vend tickets, build books and maintenance manuals.
- Read simple blueprints, sketches, diagrams and drawings.
- Record data correctly.
- Do addition, subtraction, multiplication, division, percentages, ratios and fractions.
- Understand written and verbal instructions and explanations.
- Work without close supervision.

- Work together and share work with people from all levels.
- Solve problems.

The brochure then goes on to explain that Motorola is giving tests to new applicants which cover such areas as reading, visual pursuits, arithmetic, and forms completion. The worker is then asked to answer a few questions on his or her own, with answers provided in the back of the brochure. Workers are encouraged to get in touch with their supervisor, training department, or personnel department if they cannot answer the questions.

The first two exercises in the brochure are sample jobs tasks: preparing a specification chart and calculating sums, averages, and ranges for statistical process control. Then there are sample test questions on arithmetic, reading comprehension, visual pursuit (following the lines in a circuit), and forms completion. Some of the math and reading exercises resemble workers job responsibilities, such as filling out a time card. The purpose of the brochure was to help workers determine if they need help, and to encourage them to voluntarily sign up for the classes.

In most sites, 60-70 percent of the workers were taking the pretest, but problems occurred when it was suggested that workers enroll in classes. For some workers, the complications were logistical: baby-sitting, transportation, etc. For others, there was a hesitancy toward entering into more school. Managers in personnel and line supervisors in each site talked to individual workers on the floor in an effort to overcome fear and scheduling difficulties, but recruitment into the voluntary programs remained a sticking point. And the training providers had much to learn in terms of developing job-related skills efficiently: "For the most part, we were getting positive feedback on the classes from the workers, but workers were still not making the necessary progress to perform the changing requirements of their jobs," according to Sylvia Ohanesian, Sector Manager for employment services.

The Sector is now entering into its second phase of basic skills operations, a phase which we might call "job-related." The goal is to develop a curriculum which maximizes the performance in job-related tasks. The basic skills curriculum development is now based more on job competencies -- the skills needed to provide entry into more sophisticated work and training. For mathematics, that means whole numbers, decimals, fractions, and percentages. For reading, grade levels are demeaning and misleading, so development efforts are geared toward establishing job-related, competency-based instruction.

The Motorola Basic Abilities Test Battery (BATB) is a validated job-related test which is administered to all production operators to determine who meets the job requirements and who needs to enter into basic skills programs (New Directions classes). The latter group is then given the Test of Adult Basic Education (TABE), a standard assessment instrument, for class placement and determining competencies. Supplements to the English, reading and math classes were developed which incorporate job-related competencies, such as completing earned hour reports, calculating means and ranges on control charts, etc. In addition, the sector realized that it had a need to develop in-house expertise and direction for its in-house classes therefore, a professional adult educator was identified for each of its major locations.

Since there was no identifiable career path for such a person within Motorola, the Communication Sector's innovative solution to this need for a basic skills expert was to develop a liaison position with the local training provider. In Schaumburg, for example, Harper College provides a dedicated full-time educational liaison, paid for under contract with Motorola. This liaison is directing the development of job-related curricula orienting the instructors to teaching the material, providing feedback on students' progress, maintaining the quality of the instruction, counseling the students, scheduling their in-house classes, etc. Computer aided instruction (CAI) is under consideration to meet the needs of certain students and to help improve the quality and cycle time of the instruction.

All facilities within the Communications Sector have implemented the New Directions testing and classes as mandatory programs on 100 percent company time. The Sector managers believed that the training had reached as many workers as possible on a voluntary basis and it was time to involve everyone. It may be that those who resisted the voluntary classes were the people who had the greater basic skills deficiencies and who were less motivated than the volunteers. But the impetus for making the programs mandatory was from the line management, who saw the improved quality and ability of those with the basic skills to move rapidly up the learning curve into new jobs and to outperform those without the training.

At first, operations managers were only willing to finance the voluntary program for 50 percent of training hours, but over time they began to see the real need to establish company-funded mandatory basic skills programs. There were two key issues in the implementation of the program: (1) establishing a full-time adult education liaison in each site, and (2) providing dedicated classroom space in each site. In preparation for establishing the full-scale, mandatory New Directions program, the Communications Sector developed a detailed communications and implementation guide for use in each facility. The implementation process begins with meetings to help the supervisor to understand the need for change, and then moves on to workshops for managers and supervisors in problem-solving, stress, and cultural issues to assist employees who may be resistive and/or threatened by the change; a "town hall" announcement of the program, and then small department meetings to answer employees' questions. Each employee will take the Motorola Basic Abilities Test Battery; and those targeted for training will receive the TABE and move into classroom-based training.

The classes need to accommodate all shifts, and are designed to be between 10 and 20 persons each. The Communications Sector is committed to offering classes to targeted workers for up to four hours per week on company time, possibly six hours per week for ESL. It is estimated that it will take an average of four years for workers who are in ESL classes to meet the job requirements.

Lessons from Motorola

The catalyst for change at Motorola has been new technologies and a heightened need for virtually error-free production quality. After a period of hiring workers without any systematic regard for their level of basic skills, Motorola finds itself in a position where it must upgrade its workers' capabilities significantly. Against this, it has a company culture which values employee relations and has made de facto commitments to its long-tenure workforce

with regard to job security. Beginning from a relatively small experiment in its cellular division, basic skills training has now become a centerpiece of the company's effort to upgrade its incumbent workforce so that its skills will match those of carefully assessed new hires.

An excellent component of Motorola's programs is the emphasis on job-relatedness. Over time, the company has worked to identify the skills needed for jobs and for job-specific training and is designing basic skills training programs to fulfill real needs on the shop floor. Job-related training is not only prudent and fair from a legal standpoint, but also increases the efficiency with which human resource dollars are spent. Teaching workers to help their children with homework (as some companies do) is fine, but learning job-related English, math and reading skills makes more sense for both the worker and the company in the long run.

While Motorola is well on the way to establishing "best-in-class" basic skills programs, all those involved in the process warn that there is nothing easy about this challenge. The first inclination of managers is to believe that the problem is not as bad as the personnel specialists think it is. Therefore, the key to any success that Motorola has is enlisting the support of all levels of management. For managers to believe in the program they must sense that it has bottom-line implications. At Motorola, the positive experience in the Cellular Division was critical to building confidence in change among managers in other areas.

The early basic skills programs at Motorola were voluntary, on 50 percent company time. Voluntary programs benefit from motivated students and probably reach workers who are at a higher level to begin with. Now, one sector at Motorola is implementing mandatory basic skills training on 100 percent company time. Beginning with voluntary training and then making it mandatory is an innovative strategy that could turn out to be an effective model for grouping workers at similar ability and motivational levels, and for upgrading worker skills in general.

In the Communications Sector and within its Schaumburg plant, managers have begun to realize that there is no short-cut route to meeting basic skills goals. The deficiencies are substantial and thus the required investments are large. Much time and money has been spent developing an elaborate company communications strategy, so that as many participants as possible will endorse the program. Large expenditures were made on educational providers and dedicated training coordinators. There is nothing simple about basic skills training, and a sloppily developed program may backfire. "For employee relations," says Sylvia Ohanesian, the Communications Sector manager, "basic skills training programs can be either a boon or a bust. These programs are very time consuming and very involved if you are going to do it well and obtain the desired workplace skill improvements."

Training Programs at Superior Technical Ceramics

Introduction

Superior Technical Ceramics Corp. (STC) is located in the small Vermont town of St. Albans, near the Canadian border. Employing a work force of almost 100, STC manufactures custom ceramic products for a variety of uses, selling to other businesses across a range of industries. Most production runs are small or medium in size, requiring frequent setting up of machinery for new jobs. Sales have expanded significantly during the past four years but like many manufacturing enterprises over the last decade, STC has been able to increase output and sales without significantly expanding its workforce. The business has been in the family of the company's president for about 100 years; however, the company was located in the mid-atlantic region until 1975.

The decision to relocate to Vermont was aided by access in the northern part of the state to natural gas pipelines (used to fuel the company's ceramic furnaces) and by a favorable state-financed loan package to build the current facility, the first construction in the St. Albans industrial park. Most of those in the local workforce have a farming background with little manufacturing experience. However, it is an english-speaking population and a hard-working one, according to company management, which aids in the ability to promote from within. The company's wages, near the average for manufacturing in the area, compare favorably to those available in the local agricultural, service, and tourist industries.

Given the highly technical nature of ceramic manufacturing, STC is faced with pervasive skill shortages among its shop-level staff. Typically, each worker is operating his or her own machine or set of machines, filling an order which has detailed technical specifications. A unique complication in machining ceramics is that the pieces shrink when fired in the furnaces, and therefore the products must be machined to close tolerances with a built-in estimated shrinkage factor. The unfired pieces are brittle, adding to the risk of breakage during production. Shorter production runs are handled by individual operators working at their stations; longer runs require more sophisticated set up and monitoring on automated machinery. As the pieces move through the shop and various operations are performed, the ceramics gain added value, and mistakes become costly. Any mistake along the way in reading blueprints, estimating shrinkage factors, setting up the machines, or in operations themselves is difficult to catch until final inspection following firing, and can become quite expensive.

Each area of the shop has a supervisor, set up personnel, supervisory (lead) operators, and line operators. Turnover among entry-level operators is high during the first two years, a sorting process which helps determine who among the young work force is really cut out for the company's exacting production work. The unique set of skills required in the manufacturing process means that it can take a number of years before workers on the line are producing at their full capacity. The first shop-level job is operator, and most operators are young

workers with a high school degree. Over time the most skilled, meticulous, and ambitious operators are promoted as space and skill permit.

Over the last ten years, new technology has increased the company's demand for skilled set-up personnel, ceramic engineers, and technicians. Two years ago STC recruited its first mechanical engineering technicians from the local technical college, at a rate of pay nearly double that of less skilled shop-level workers. These technicians have taken responsibility for implementing computer numerical control production within the plant.

Across the various manufacturing processes at STC, setting up each specialized production run requires reading blueprints and making basic algebraic and trigonometric calculations. In the mid-1980s, the company's President sensed that its engineers were being relied upon to perform set-up and monitoring operations that could be done by properly trained shop-level supervisory personnel. Unfortunately, such workers are often in short supply.

The company believes that its skill shortage is due, in part, to the school system's overemphasis on "paper pushing" to the neglect of classic blue-collar skill development. On top of that, the state government is perceived as more responsive to environmental and tourism concerns than to local manufacturing needs. "We have a perpetual opening posted for a machinist, and they are simply not available," according to the company president. Always on the lookout for a shop generalist who understands the broad contours of the production process, company management believes that these people no longer seem to exist. Whether the cause is a changing workforce or changing technology or both, STC has had no choice but to develop virtually all of its workforce skills internally.

With its specialized production requirements, "job shop" production runs, and lack of extensive resources for training, STC is a typical small manufacturing concern. What is less common is the innovative way the company has tackled the problem of skill shortages among its shop-level personnel. Beginning in 1984, STC instituted a set of company-developed basic skills programs, designed and delivered by its own ceramic engineers. The result has been a dramatic increase in the number of promotable operators, a decrease in the amount of time spent in set up and supervision by the engineers themselves, and qualitative improvements in production efficiency.

STC's training programs are all created and taught by company engineers to develop job-related worker skills. The original courses offered were shop math and blueprint reading, which have become the prerequisites for specialized courses such as kiln, safety, and quality inspection. The classes are offered on 50 percent company time, with participants selected by top management based on perceived potential in the company. Although participation in training is not sufficient for promotion, it has, over time, become necessary for promotion. In fact, the training programs have become a key vehicle for assessing worker motivation, ability, and career potential.

This case study reviews the structure and development of STC's basic skills and related training programs, and in so doing reveals some instructive lessons. STC has shown that diverting in-house resources to training can pay off significantly in building critical skills, without the need for expensive outside assistance. It also demonstrates that

"home-grown" programs may be easier to make job-related and to tie into promotion than classes designed and administered by outside educational experts.

The STC experience also reveals some of the limitations of internally developed and delivered training. In this environment, success depends on the communication skills of company staff, and on their interest and competence in teaching. Quality in instruction is critical for any training program and it is the rare person who is both technically proficient and has the gift to be an energetic, patient, clear, and innovative teacher. The STC experience also shows that some skills may be more easily taught by in-house personnel than others. But overall, the STC leadership has proven that it is possible for a company of virtually any size to fill some critical gaps in its skill requirements.

Structure of the Training Programs

The skills required of all shop workers beyond the entry level are basic mathematical calculations (including fractions, percentages, and simple numerical conversion), basic algebra, basic trigonometry, and blueprint reading. Subsequent to completing basic training in math and blueprint reading, workers enroll in courses which relate to particular departments, production processes, or management tasks, such as Acceptable Quality Level (AQL) Inspection, Kiln, Safety, Production Papers with Computer Impact, Threads and Threading, General Ceramic Theory and Concepts, and Industrial Leadership and the Economics of Manufacturing.

The courses are wholly company-specific and have been developed and taught by the engineering staff in response to identifiable skill shortages within the plant. These are training programs which in retrospect the company leadership believes it could not adequately function without. This is especially true of the basic math and blueprint courses. Orders from STC clients are quite technical in nature and must be translated accurately into detailed machine set up and production specifications. Many of the ceramic pieces go through a number of production stages, therefore calculation mistakes or set up errors could happen anywhere along the way. Competent shop math and blueprint reading skills are necessary to avoid costly errors in calculating set up requirements and shrinkage factors.

The courses are taught by company engineers in a classroom setting (the lunchroom equipped with a blackboard) on approximately 50 percent paid company time and 50 percent workers' time. However, this was done without increasing total payroll costs by using a part of the regular work day. The single shift within the plant normally ends at 4:30 p.m.. Workers enrolled in training enter the classroom at precisely 4:15 p.m., and punch out at the end of class. Classes run for 30-45 minutes once per week, but workers are not paid for time spent in class after 4:30.

The classes are offered during the traditional academic year, in the fall and continuing into the spring, beginning sometime after Labor Day and wrapping up sometime before Memorial Day. Because summer is a time of vacations and an earlier end to the shift day, neither engineers nor workers are interested in staying late at the plant to teach or take classes. The classes are held once per week, with the total number of weeks being in part determined by the

progress which the participants are making with the material. Some classes are designed to be longer than others, with each class being given an "estimated run time." For example, the basic math course is approximately 22 weeks long, while the safety course meets only twice.

Unlike many training interventions, those at STC serve to screen workers for promotion as well as to train them. The manual skills required of the operators are taught on the shop floor, but the company was finding that promotion required a larger set of skills that were not so easily taught through on-the-job experiences. The initial list of workers invited for training consists only of those that the company management believes have potential for advancement. The courses help to assess further the job-relevant qualities of individuals. The training has thus become an aid in identifying workers who have the motivation and basic ability to become lead operators and set-up personnel.

Not all shop workers are invited to participate in the classes. At the beginning of each fall, the members of the training committee, which consists of the Vice-President/Manager of Engineering, the Plant Manager, and the senior design engineer (who instituted the original shop math/blueprint course), review the employee list and discuss each worker's promotion potential and current skill level. Operators are generally in their twenties and over half are women. Most have graduated from high school, but very few have any subsequent schooling.

The number of workers is small enough that members of the training committee have had the chance to observe and interact with all of those on the list. At the time workers are selected for math or blueprint reading courses they are usually at the entry-level operator or lead operator level. However, even the technicians have participated in shop math and blueprint classes -- in part to learn some additional company-specific skills, and in part to gauge the quality of their formal training.

Workers are selected for the basic skills classes if management believes they have the potential to be promoted. Those workers who are chosen are strongly encouraged to participate. In addition, without encouragement or publicity a few uninvited workers will ask for approval to enroll in the classes, and these workers are also let in. Each class is designed to accommodate no more than 10-12 workers.

The classes are not open-entry, open-exit, or self-paced, but the tempo of the class is set flexibly by the teaching engineer in response to the perceived abilities and progress of the class. By inviting only those with the highest estimated potential, management creates classes which have less need for individualized tutoring.

The design engineer believes strongly that the basic skills programs would benefit all workers, but there are several reasons why participation is restricted. First, those that are selected can generally move through the classes at a more rapid rate than the average operator, who would slow down the pace of the class considerably. Second, there is a real cost to the engineers' time in instruction and opening up courses to all shop-level workers in a small, individualized classroom setting would raise costs considerably. Third, the company president expresses a traditional view of small business manufacturing: "There is not room for all operators to be promoted, and not all operators want to be promoted. Many are content doing their line jobs and do not want added responsibility."

With the exception of the math and blueprint courses run by the design engineer, most of the courses are run by two engineers, the "primary" and "secondary" instructors. Both teachers are present at each class, with the secondary instructor acting as a teaching assistant. Engineers do not volunteer to teach classes -- like the workers they are selected by the training committee (but they can refuse to be instructors if they so choose). The instructor prepares a course outline which is reviewed by the committee. Students are required to provide a three-ring notebook to hold class materials, and instructors are encouraged to provide daily class handouts. Homework assignments and quizzes are given at the individual discretion of the teacher, but he or she is encouraged to develop some sort of final homework assignment or exam.

Following the completion of the course, instructors are required to submit a notebook to the training committee which contains the detailed curriculum, class materials, and daily assignments. This reduces the preparation time required when courses are repeated and smooths the transition between instructors when turnover among the engineering staff leads to the appointment of a new course instructor.

The courses are designed by the individual instructors and generally include a blend of company-developed and outside materials. The combined math/blueprint course taught in 1987 had as its purpose familiarizing students with basic applied math and special topics that are "useful in everyday STC manufacturing." Below is an outline of the first semester of the year-long course:

I. Basic Number Theory
II. Basic Number Equivalence
III. Basic Algebra
IV. Ratios, Proportions, Basic Equations
V. Basic Shrinkage Theory
VI. Boundary Condition Testing Theory
VII. Basic Instrument Reading
VIII. Basic Instrument Application
IX. Basic Blueprint -- Definitions
X. "Advanced Blueprint"

The second half of the course covered basic and applied trigonometry as well as selected additional topics. In addition to achieving a level of competence within each student in the above areas, the goal of the course was to develop additional skills which make use of the basics developed in the class. In other words, it was hoped that the class would lead to the creative application of these concepts on the shop floor.

As in any training program, motivation and attendance varies widely across the participants. Instructors are required to take attendance (ostensibly to keep payroll correct), but even so up to 50 percent of the enrollees either participate sporadically or drop out of the courses altogether. Some workers drop out due to a lack of motivation, while others are sending a signal that they are unlikely to be able to master the material. Dropouts are rarely promoted and often end up leaving the company within the following year.

The course requirements vary across the classes, but all teachers are encouraged to develop some sort of final assignment or exam. The math and blueprint courses include weekly homework and a final exam. The design engineer, who teaches these basic courses, notes that the grades are curved, with the highest or second-highest score set to 100 and the other grades set in relationship to that score. In this way

workers' scores are on average higher and not too discouraging.

The plant manager notes that each worker's quantitative score is not used as an absolute, single indicator of promotability. Rather, he places the score within the context of the worker's performance in the shop, overall motivation, attendance, and effort level within the course. In some cases, openings are filled with workers who may have struggled with the courses, but who were diligent students, are competent in other ways, and who may be the best people available to staff those higher-level positions.

In looking over his attendance and grade books for the last several years, the math and blueprint program instructor realizes that almost all of the enrollees who have remained with the company have indeed been promoted on the shop floor. But he also sees that those workers whose attendance or performance was poor tended to leave STC altogether. Clearly, these less motivated or less able workers sensed that opportunities within STC were going to be circumscribed, and the ambitious among them acted accordingly.

Program Development, Refinement, and Expansion

The initial math and blueprint classes at STC were developed and first taught in 1984 and 1985, respectively. The courses were developed on the basis of the instructor's knowledge of what was required on the shop floor and where the skill gaps were. In the first year, the courses were broadcast through flyers given to each employee, and there was open, voluntary enrollment. Based on the experience with that class, the instructor realized that little could be accomplished in a setting with such a wide variety of worker backgrounds, motivation, and skill.

The decision to make the classes mandatory and by invitation only was made by what was to become the training committee, along with the president of the company. In essence, the change was an effort to more efficiently target scarce engineering resources to those employees who would benefit most within the company from company-specific training. "It just wasn't efficient to give basic math courses to a slow, line worker who wants to help his grandson with his homework," said the instructor. By targeting motivated employees with a high likelihood of promotion, the training was able to most efficiently fill the training gaps at STC.

Targeted worker training also had the side benefit of improving employee motivation. Workers who questioned why they were being referred to training were advised to meet with the company president, who maintains an open-door personnel policy. The targeted worker would be advised by the president that the training was no guarantee of advancement, but that energetic participation in the class was a definite prerequisite for promotion. So without making any specific promises, the employees were given the impression that this training was likely to lead to more pay and responsibility on the job. Such a direct link between training and promotion is likely to increase the motivation of the ambitious.

By the fall of 1988 STC had run three full sets of math and blueprint courses. At this time most of those that had been targeted for basic training had received it, and the

company decided to expand the training into a broader range of job-specific courses. Standard policies and procedures were developed and other engineers were involved in course development and teaching.

There has been no effort to assess in any quantitative way the costs and benefits of STC's training initiatives. The only significant costs are fifteen minutes of lost production time for each 30-45 minutes of worker training and the value of the engineers' time as teachers. The plant manager estimates that he spent 30 hours preparing his management course and then an additional one hour of preparation time for every 30-minute class. Over time, the courses become shorter as the teachers gain experience and decide what needs to be maintained in the curriculum and what can be eliminated.

The STC president sees the benefits of the training as fundamental: "We can fill more orders than we otherwise could. More openings are being filled with reasonably qualified people promoted from the shop floor." As skills improve on the floor the need for engineering supervision decreases, and more machines are being used efficiently.

Assessment of Training Programs at Superior Technical Ceramics

There are several unusual aspects of STC's training that are interrelated and reflect the strengths and weaknesses of the program. This is truly a home-grown set of courses, developed, implemented, and taught by the company's engineers. By developing its own training, STC was able to avoid the use of expensive outside consultants or professional educational providers. The engineers were uniquely qualified to identify skill deficiencies on the shop floor and to design a curriculum to remedy those deficiencies.

Over time, the company realized that the most resource-efficient training program would target services on promotable employees: this targeting was not only efficient but increased worker motivation to participate in the classes. For a small company which is reluctant to invest in work teams and pay-for-knowledge systems, targeted training helps to limit the number of workers who are building skills and expecting commensurate compensation. Even with targeting, however, workers report some frustration when their added training does not translate immediately into higher compensation. Clearly, there is a tension between training workers, paying them more for their higher productivity, or losing them to other, larger employers who could benefit from their budding skills.

The original courses in shop math and blueprint reading were clearly a success in that the training investment was small and the most critical skill shortages were alleviated. However, the subsequent expansion into other courses is instructive and highlights some of the limitations of in-house programs. Math and blueprint were the ingenious creation of an engineer who happened to have the personality type of a natural-born teacher. He had tutored a number of technical courses in college, taught skiing on the slopes of Vermont, and enjoyed conducting the training programs at STC. Not all professionals are excellent teachers, however, and some of the other engineers have even resisted taking on their appointed roles as instructors. Now that all

engineers are participating, there are comparisons being made between the various teachers, and this is an added headache for the training committee.

Given the difficulties in expanding this program into other areas, one wonders whether training would have ever gotten off of the ground at STC without the fortuitous hiring of an engineer in 1982 with a gift for teaching. The new challenge for the company is to move into more advanced kinds of engineering training. According to the company president, "the problem is, for advanced engineering we have to figure out a way to train the trainers first, and then get them to train the shop-level workers, and it all has to happen before turnover erodes your investment."

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